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TREATMENT OF CAUSALGIA

RESULTS OF INTRANEURAL INJECTION OF 60 PER CENT. ALCOHOL

DEAN LEWIS, M.D.
CHICAGO
AND
WESLEY GATEWOOD, M.D.
IOWA CITY

Causalgia is one of the most distressing complications or sequelae of peripheral nerve lesions. This syndrome, observed by Weir Mitchell during the Civil War, has as its predominant feature pain which is described as burning or throbbing in character and is often compared to the sensations produced by pin pricks, a red hot iron or an injury of the flesh. This pain, which never ceases, even at night, may be aggravated by any number of causes and finally becomes paroxysmal.

It is difficult to determine its frequency, for statistics concerning peripheral nerve lesions differ widely. This variation is probably due to differences of opinion regarding the type of case that should be regarded as causalgia. Varying degrees of pain are observed after peripheral nerve injuries, but only the intense paroxysmal type should be regarded as causalgia. Four cases of causalgia were noted among the 550 cases of peripheral nerve injuries which we observed at U. S. General Hospital No. 28. Three of these patients have been operated on and cured by intraneural injections of 60 per cent. alcohol. It is probable that the fourth patient, who is still under observation, will require this treatment.

Weir Mitchell believed the pain due to an ascending neuritis which might involve any injured nerve and gradually involve all the nerves of the extremity affected. It seems to have been demonstrated, however, as a result of surgical interference, that the median nerve is involved most frequently in causalgia affecting the upper extremity, and the internal popliteal in causalgia involving the lower extremity. When a lesion of the ulnar nerve is accompanied by intense pain, it is usually due to an associated lesion of the median nerve or to an injury of the brachial plexus affecting both ulnar and median nerves. Other nerves may be involved. In one of the cases observed by us pain persisted, although diminished in intensity, over the distribution of the long saphenous nerve after injection of the internal popliteal. The pain subsided completely after injection of the long saphenous nerve.

The pathology differs widely in different cases. Joyce has reported five cases, in one of which the median nerve when freed from scar tissue appeared swollen and bluish gray, mottled with purple spots. A small neuroma, which was adherent to the biceps, was found on the nerve. In another patient who complained of severe pain in the foot when walking, sitting or lying down, but who had no paralysis or anesthesia, there was found on roentgenographic examination a small foreign body in the neighborhood of the sciatic nerve. When the operation was performed, the foreign body was found embedded in scar tissue just posterior to the nerve. Immediate and permanent relief of pain followed removal of the foreign body. Gosset found the median nerve only slightly affected in the operations performed by him to relieve causalgia affecting the hand. In one of the cases observed by us, the median and ulnar nerves were embedded in scar tissue, and the median nerve was definitely enlarged and indurated just above the antecubital fossa; in another, the internal popliteal nerve was surrounded by some adhesions which were not at all dense, and the long saphenous nerve, which was subsequently injected below the wound, appeared normal. In both of these cases, neurolysis had been previously performed but had given no relief. In the third case, the median nerve appeared injected and somewhat enlarged, but its consistency did not differ from that of a normal nerve.

REPORT OF CASES

CASE 1.—*Median and ulnar nerve embedded in scar tissue in the lower third of left arm. Median nerve enlarged and indurated just above the antecubital fossa. Previous neurolysis without relief.*

Private E. G., wounded at Château-Thierry, July 19, 1918, had been struck by a machine gun bullet in the left arm midway between the shoulder and the elbow. This produced a comminuted fracture of the humerus and a paralysis of the ulnar, median and musculospiral nerves. He gradually recovered from the musculospiral paralysis, but about ten days after the wound was received he experienced a burning pain in the hand which became paroxysmal in character. This pain was increased by any attempts at movement, by jarring of the bed, and by any quick, irregular movement of the body.

The patient was operated on at Camp Grant, Feb. 10, 1919. Neurolysis of the median and ulnar nerves was performed at this time. After liberation, the nerves were surrounded by a fat transplant. The brachial artery had evidently been injured, for when the operation was performed, no pulsation could be detected in it distal to the wound. The median nerve was described in the operative findings as being bound down beneath the biceps muscle and kinked by scar tissue. The internal cutaneous nerve was not involved.

When examined, April 15, the patient held the forearm flexed at an angle of 80 degrees, with the hand raised and the fingers extended. The fingers were delicate and the whole hand appeared atrophied when compared to the other hand.

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The skin was dry, there being no perspiration. A furfuraceous scaling was noted especially on the dorsal surface. The skin on the dorsum was white and shiny while that on the palmar surface was pink, there being no marked difference over the median and ulnar distribution.

All motions of the flexor and extensor muscles were limited. This limitation of motion was probably due to fear of paroxysms of pain which were induced by any attempt at movement. Extreme flexion of the fingers was limited by fibrosis.

The patient complained of a continuous pain over the hand which was more intense over the distribution of the median nerve and was aggravated by almost any movement. Exposure to air or to dry heat, especially a hot atmosphere, also induced a paroxysm, to prevent which the patient usually wore a glove soaked in cold water. When the glove was not worn the patient went frequently to the cold water tap and let the water run on the hand in order to secure relief. He assumed postures to protect the hand, which was usually held up, the body being inclined toward the left.

The patient's mentality and disposition became affected by this aggravating pain. He avoided other patients in the ward and often would be gone for long periods of time, evidently being desirous of being left alone. At times he would be found curled up in bed with the arm bent up and motionless and with the body curved toward the affected hand.

April 17, the ulnar and median nerves were exposed in the lower third of the arm. They were embedded in scar tissue from which they were freed. The median nerve was then injected with a 60 per cent. alcohol solution.

The patient experienced almost immediate relief from the pain. Motion returned; and although there was considerable atrophy, there has been a progressive improvement in the hand and a marked improvement in the health of the patient.

CASE 2.—*Causalgia of the left foot. Ulceration of the foot and leg resulting from maceration of the skin due to wrapping the leg with wet towels for weeks. Internal popliteal nerve surrounded by a small amount of scar tissue. Previous neurolysis without relief by fat transplant. Cure by alcohol injection of internal popliteal and long saphenous nerves.*

S. H. T. received a machine gun bullet wound of the left thigh at Château-Thierry, July 28, 1918. The bullet entered the anteromedial surface of the thigh about 8 inches above the level of the knee joint and made its exit at the same level on the external surface posteriorly. Ever since the wound had been received, pain had been noted along the back of the leg and inner side of the ankle and foot.

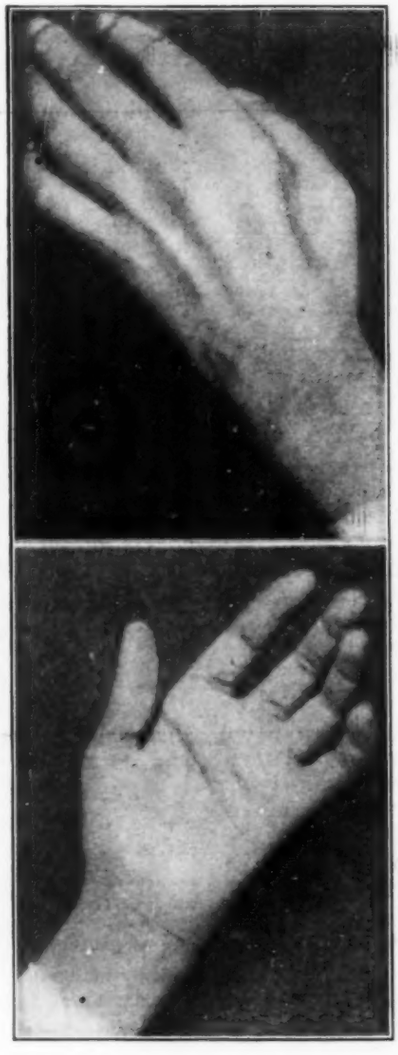

Fig. 1.—Appearance of the hand and the position in which it is held in causalgia. The hand is atrophied and emaciated; more delicate and slender than the normal one. The skin has a glossy appearance and is dry, as the secretion of sweat is diminished or entirely suspended.

An operation performed at Camp Grant, Feb. 11, 1919, revealed scar tissue surrounding the sciatic nerve which did not, however, cause any gross pathologic change in the nerve. Neurolysis by fat transplant was performed In the history it was noted that an ice bag was applied February 24, to relieve this pain.

The patient was admitted to U. S. General Hospital No. 28, March 19. He said that he had had no relief from the pain as a result of the operation. It was aggravated by hot applications and irritation of any kind, but was relieved by cold

This patient presented a pitiful picture. He remained in bed all the time. The foot and leg were wrapped in a towel which was kept soaked with water. This had to be renewed frequently, for cold water relieved the pain. As a result of this continued application of a wet towel, the skin had become badly macerated, and several large ulcers had formed on the foot, and multiple small ones on the leg from the opening and the breaking down of blebs. Movements were preserved but were limited, for any attempt at movement induced a paroxysm of pain.

April 24, the sciatic nerve was exposed above the site of the previous operation and the internal popliteal nerve was injected with 60 per cent. alcohol. This was followed by almost immediate relief of pain over the distribution of this nerve, but some pain still persisted.

It was noted in the history that prior to the injection all movements controlled by muscles supplied by the sciatic nerve were present. After the injection, flexion of the toes was lost and inversion and plantar flexion of the foot were weak.

After the injection there was loss of pain and tactile sense in the sole of the foot and back of the heel. There remained, however, marked hypersensitiveness on the back and inner side of the leg down to the internal malleolus where sensory loss was complete.

Pressure on any part of the thigh, whether over the course of nerves or not, produced a sharp pain which started on the inner side of the knee and passed down along the inner side of the crest of the tibia to the internal malleolus, ending posterior to it. This pain had been present from the beginning and had persisted since the alcohol injection. Even the touch of the hand or a jar of the patient induced the same pain. A marked erythema was found along the entire length of the inner surface of the leg. The erythematous strip measured from 2 to 3 inches in width and extended down to the internal malleolus and back of it along the inner side of the foot. The pain did not seem to be influenced by the position of the foot.

June 23, the long saphenous nerve was exposed at the level of the knee joint and injected with 60 per cent. alcohol.

There was immediate relief from pain. It was noted in the history, June 30, that the ulcers were healing, that the erythema had disappeared, and that the patient was comfortable. Shortly after this, the patient was able to put on a shoe and walk with a cane, as the ulcers had healed.

By August 10, all motions had returned and the power of the gastrocnemius, soleus and tibialis posticus was practically normal. There has been no return of pain.

CASE 3.—*Causalgia of left hand. Chapping and ulceration of the skin due to dryness, causing a bleeding hand. Median nerve swollen and injected. Complete relief following injection of 60 per cent. alcohol.*

McM. H. R. received a perforating bullet wound of the left arm 1 inch above the elbow, unaccompanied by fracture, Oct. 2, 1918. Immediately after the wound was received, ulnar, median and musculospiral palsy was noted. Three days after the wound was received, the hand became painful. The pain was described as characterized by a burning sensation or by a feeling of being pricked by pins and needles. Within two weeks the pain became severe. The

skin commenced to peel off the hand about the same time, starting first in the palm of the hand and on the palmar surface of the index and middle fingers. By December, 1918, there was a weeping erythematous eruption involving the entire hand with the exception of the dorsum of the thumb. It extended up to the wrist on the dorsal surface. The pain was aggravated by heat, but relieved by cold, especially by cold water. To relieve the pain, the patient wrapped the hand with a towel soaked in cold water.

For several months the condition was so severe that even the slightest jar of any portion of the body induced a paroxysm of pain. At times the patient walked on his toes to prevent jarring. Rubbing any part of the body, especially dry rubbing, caused a paroxysmal burning pain in the hand. Sudden noise would aggravate the pain. The hand always felt as if "hot and dry." The pain was not so intense in rainy weather. When the hand became hot and sweated profusely, the pain was intense.

By March, 1919, the musculospiral paralysis had practically disappeared, and the patient could extend his wrist. By May, the patient was able to close the hand almost completely. By July 1, he had recovered all the movements of the hand and wrist. The power of the muscles was practically normal.

The ulceration originally involved the entire palm of the hand and the dorsum as high as the wrist. The back of the hand gradually healed from above downward, and when first examined at U. S. General Hospital No. 28, there was only slight roughness, redness and scaling on the back of the hand. The palm was ulcerated and bleeding. The ulcers had a foul odor. Severe pain was experienced in the hand and forearm whenever pressure was brought to bear over the course of the median nerve at the level of the scar.

It was thought at one time that there might be a neuroma, but a satisfactory examination could not be made because of the pain induced by pressure over the course of the nerve.

September 6, the median nerve was exposed just above the old wound. The nerve at this point was reddened and injected. It appeared larger than the median nerve usually does but did not differ in consistency from a normal nerve. It was injected with 60 per cent. alcohol.

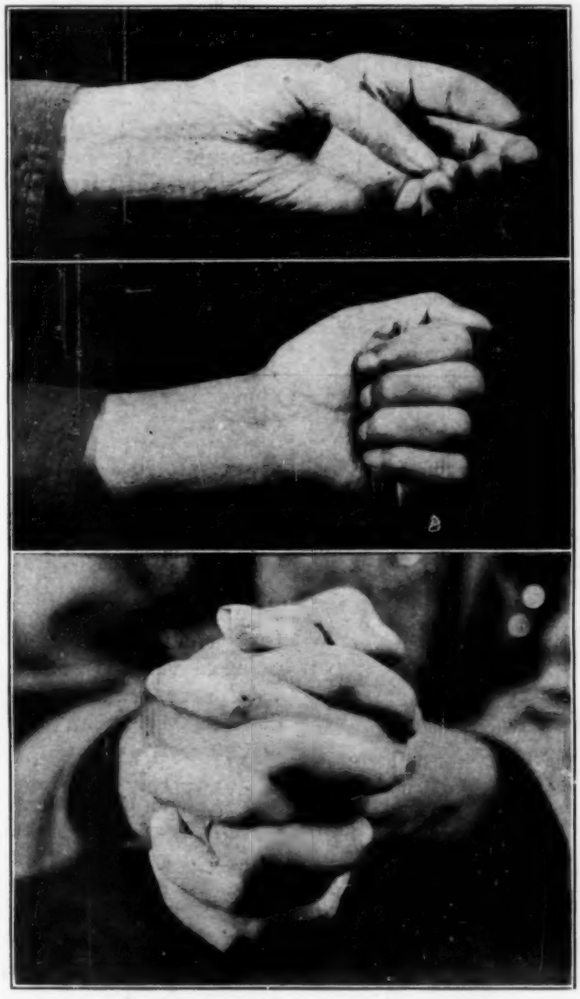

Fig. 2.—Complete recovery of motion in muscles supplied by median nerve after injection with 60 per cent. alcohol. This occurred within three months following the injection. Beginning return of motion was noted within three weeks.

September 8, it was noted that the pain had been completely relieved; the hand was dry and healing.

September 11, there was no pain, the ulcers were healed, and the hand was dry and scaling.

Following the alcohol injection there was almost complete paralysis of the flexor sublimis digitorum, the flexor profundus of the index and middle fingers, and complete paralysis of the flexors of the thumb; also some weakness of the flexor carpi radialis and almost complete paralysis of the palmaris longus. Fair power remained in the opponens pollicis.

September 17, there was no pain. The hand, as described by the patient, felt "like a new hand." There had been considerable return of motor power within the last six days, notably in the opponens pollicis and flexors of the middle finger. Power was beginning to return in the flexor profundus of the index finger. There was no return of flexion of the thumb at this time. The patient went home on a furlough.

COMMENT

The pain as a rule reaches its maximum intensity four, five or six months after the injury, then it gradually but slowly, sometimes very slowly, decreases in intensity. The fear of exciting paroxysms of pain may persist long after the pain has actually decreased in intensity, and patients will still resort to methods already described of controlling or preventing the recrudescence of the pain. Improvement in voluntary motion may not occur or may occur slowly even when the pain has subsided and the positions of the parts affected may still persist, resulting in the development of ankyloses which are corrected with difficulty and may render the hand or foot practically useless.

These three patients treated by an intraneural injection of 60 per cent. alcohol experienced almost immediate relief from pain. The ulcers and chapped, bleeding areas healed rapidly, and the paralysis resulting from the injection of the alcohol was temporary.

The early use of the muscles of the extremity affected prevented the development of contractures and atrophy.

In the first case in which the median nerve was injected, April 17, 1919, examination made September 25 revealed good power, which was practically normal in all the muscles supplied by the median nerve. In the second case, the internal popliteal nerve was injected, April 24, 1919, and, Aug. 10, 1919, an examination revealed that all the muscles supplied by this nerve had recovered motion and that the power of the gastrocnemius, soleus and tibialis posticus was practically normal. In the third case the injection was made, September 6; and September 17, motion was present in the opponens pollicis and in the flexors of the middle finger. Motion was beginning to return in the part of the flexor profundus attached to the index finger, but there was no return of power in the flexor longus pollicis.

Sixty per cent. alcohol seems in some cases to interrupt the conduction of sensory impulses, but not to interfere with the transmission of motor impulses. As

is indicated by the excerpts from histories which have been given, motor palsies, when they do develop, are transitory and are rapidly recovered from.

When this injection is made, the nerves affected should be exposed under general anesthesia. The injection should be made above the wound or site of the injury, for in those cases in which the injection has been made below, the results have been temporary.

Fig. 3 (Case 2).—Swollen and macerated foot in a case of causalgia. For two months towels soaked in cold water were continually worn about the foot. These wet applications caused considerable maceration, associated with ulceration.

Fig. 4 (Case 3).—Scars on palm of hand and the palmar surfaces of the fingers indicate the extent of the ulceration. This foul smelling, ulcerated and bleeding area was healed five days after injection of the median nerve with 60 per cent. alcohol.

From 1 to 2 c.c. of 60 per cent. alcohol should be injected. As this is injected the nerve swells and becomes white, resembling in color a nerve that has been fixed in alcohol for histologic study.

Leriche has advocated in the treatment of these cases periarterial sympathectomy. This procedure of intraneural injection of 60 per cent. alcohol originally suggested by Sicard is so simple and the results are so satisfactory that it should be the operation of choice. Whenever neurolysis is performed in cases of causalgia it should be combined with an intraneural injection of 60 per cent. alcohol. Neurolysis, alone, does not control the pain in many cases, and in those in which there is some relief, it is but temporary.

OBSERVATIONS ON CHEST WOUNDS

REVIEW OF FIFTY-THREE CONSECUTIVE CASES *

HUGH CHAPLIN, M.D.
NEW YORK

The present article is based on a study of fifty-three consecutive thoracic wound cases admitted to the American Red Cross Military Hospital No. 2, Paris, France, from Aug. 20, 1918, to Jan. 31, 1919, a period of over five months. It includes all such cases admitted during this period. It is necessary to consider when comparing the results secured here that during the first part of this period this unit functioned as an evacuation hospital, whereas, later on, it became virtually a base hospital. Thus, early and late deaths appear in the mortality report. Thirty per cent. of the cases were received within four days from the time of wounding; 40 per cent. from four to fifteen days from wounding, while 30 per cent. were admitted later than fifteen days. Although a special effort was made to keep particularly complete reports, rushed conditions, especially during the first few months, often made these far from satisfactory. Particularly was this true of the records of many of the cases up to the time when the patients arrived here. Again, from the point of view of final results, length of necessary convalescence, etc., we are not in a position to make any definite statement, as our patients were in most instances transferred further to the rear as soon as they could be comfortably transported. The average stay in the hospital was forty-three days. In only eleven instances were we able to hear from them later, and then only by the briefest of letters, from one to three months after departure from this hospital, so that only a general impression could be safely secured as to their progress. Also a number of cases came to us when a nearby hospital was ordered to close. They were among its most serious cases, and in three instances death occurred within twenty-four hours, so that our observation of them was almost nil. Unfortunately, the ideal arrangement whereby patients go at once after wounding to a hospital, where they remain during their entire illness, is almost never found in times of great activity. No new methods of treatment were attempted by us, so that we have no innovations to offer. This study has been made, therefore, rather as a review of our experience with this class of cases, and also in the hope of corroborating facts previously noted in the many excellent articles already published by English, French and American surgeons. It may perhaps help to decide certain of the still debated

* From the American Red Cross Military Hospital No. 2, Paris, France.

* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of several illustrations. The complete article appears in the author's reprints.

questions by the addition of further evidence for or against them. During this period also a number of isolated points of interest were noted and will be briefly dealt with.

STATISTICS OF CONDITIONS FOUND

Among the fifty-three cases considered in this article, 30 per cent. were perforating wounds; 60 per cent. penetrating wounds; 6 per cent. wide open wounds, and of the remaining 4 per cent. no record was made. Penetrating wounds were considered to be all those in which there was no wound of exit, even if the foreign body had emerged from the thorax and was lodged in adjacent structures. This attitude was taken because the foreign body might still remain in close proximity to the intrathoracic cavity and be directly connected with it by its tract, thus still acting as a possible focus of infection. In 53 per cent. of the cases, shell fragments were the offending instruments, machine gun bullets and rifle bullets in 40 per cent., and in the remaining 7 per cent. no record was made. Simple hemothorax occurred in 32 per cent. of the cases, of which 7 per cent. were large; namely, over 1,500 c.c., and 25 per cent. were less than this. Pneumothorax was reported present in a greater or less extent in 24 per cent., either with or without hemothorax or pyohemothorax. Roentgen examination has shown small pneumothoraces so often when they were not detectable by physical examination that it is quite likely that this figure is much too small. However, except in a very few instances, it is one of the least important intrathoracic conditions found in these cases. Pyothorax we found in 43 per cent. of all the cases. This figure, together with the 32 per cent. of simple hemothorax, would total 75 per cent., and leave 25 per cent. showing neither. However, as many of these patients came to us with insufficient

Fig. 1.—Insertion of a bronze wire rib-stay, apparently for the purpose of filling in the gap formed by the rib resection.

records of the conditions present soon after wounding, it is quite likely that some may have had sterile hemothoraces which had been drawn off or spontaneously absorbed before admission here. This would tend to increase the percentage of sterile hemothoraces, though still leaving some cases in which at no time was there any appreciable fluid in the injured thoracic cavity. This was clearly shown by one accident case admitted about one hour after wounding and watched carefully for the following sixteen days.

CLINICAL COURSE OF VARIOUS GROUPS

In a general way it was possible to divide the cases into two main groups, from the point of view of their

Fig. 2.—The same case as Figure 1; condition of patient after removal of wire rib-stay; increased expansion of right lung and lessened pleural thickening.

clinical course: namely, those without and those with intrathoracic infection. The former could again be divided into two further groups: those cases without and those with hemothorax. The cases without hemothorax rarely showed any rise of temperature and frequently a normal pulse rate. There might be moderate cough and perhaps some spitting of blood for a few days or a week, if the patient had been received soon after wounding. On the whole, they were quite comfortable and normal and were kept in bed for a week or ten days merely because of their almost universal fatigue and as a precaution against the development of any complication.

In those cases with hemothoraces, on the other hand, a fever of from 99 to 101 was generally present, with a moderate rise in pulse rate, probably more cough of a nonproductive, nagging, irritative character, and increasing proportionately with the amount of fluid present. There was often dyspnea, even orthopnea in cases of large collection of fluid. But in none of these cases were the men as acutely ill, with the flushing of the face, feverish brightness of the eyes, the nervous excitability or the severe toxic dyspnea, such as so often accompanied many of the infected thoraces. Exploration revealed a bloody fluid, little changed, without odor and showing no bacteria when cultures were taken. Aspiration of a fair amount of fluid seemed to relieve the fever and the dyspnea and cough, so that frequently after one satisfactory aspiration, though the remnant of fluid persisted for many days, the temperature, and other undesirable symptoms, gradually became normal. Therefore, the mere presence of a moderate temperature with a hemothorax is no certain indication of its infection. But as one cannot be sure except by examination of the fluid, and as it must always be consid-

ered guilty until proved innocent, frequent explorations should be made and the cultures of the fluid taken to check up regularly its sterility while the abnormal temperature lasts.

Two groups could also be made of the infected cases received: those without thoracic drainage and the cases arriving after this had been secured. The former usually showed a steady and rapid rise of fever within two or three days and an equally rapid increase in the other signs of general toxicity. *Streptococcus hemolyticus* either in pure culture or mixed with pneumococcus, or *Bacillus aerogenes-capsulatus* was present in 70 per cent. of the infected cases. The general failure in strength was rapid, so that, without any treatment, a patient's condition might become serious in a few days. In the cases with drainage already secured, the toxicity might continue for three or four days and then gradually diminish with the fever. At times, however, the response to drainage would be immediate. It was not clear if this persistence of fever and toxic symptoms for a few days was due to an unsatisfactory drainage at first, that is, to the retention of infected clots of considerable size, or to a coincident pulmonary complication or merely to the fact that it required an appreciable time for the tissues sufficiently to throw off the toxins absorbed before drainage was provided. After the first week following thoracotomy, except for complications, the whole course was toward a steady return to the normal. Dyspnea and cough practically disappeared and the temperature remained around 90 to 100, touching normal generally in the morning. The pulse, however, was very likely to remain from 90 to 100 for a much longer period even with the patients quiet in bed. A discussion of the variations in the clinical picture due to complications will be taken up later under that heading.

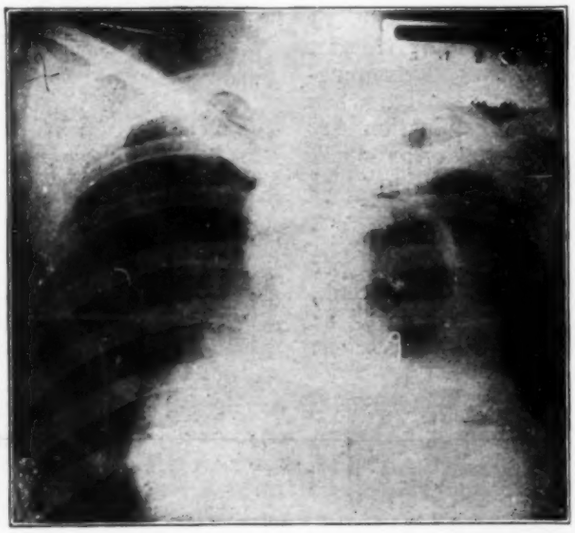

Fig. 6.—Drainage wound closed; large pneumothorax; dense pleural adhesions at base.

TREATMENT

The consideration of the treatment of these patients falls under two headings: namely, those received immediately after wounding and those received later, the discussion of which will be limited to such treatment as was given in this hospital. Because of the paucity of records in many cases we could not draw many conclusions about the early treatment. It is still a much debated question whether it is best when the missile or bone fragments or pieces of clothing may be present and when there may be lung laceration and hemothorax, to open the chest widely at the earliest opportunity, remove all such foreign bodies, sew up lung and diaphragm tears, and close the cavity. There is, to be sure, a great difference between this procedure and merely a rapid débridement of the exit and entry wounds and suturing of any sucking opening, the operative shock in the latter being far less. It is not wholly clear from the scanty records at our disposal whether the seventeen patients in this series operated on soon after wounding belonged entirely to the group of the more radical operation. Certainly the greater proportion did. Of these seventeen cases, eight, or 49 per cent., remained sterile, while nine, or 51 per cent., became infected later, requiring secondary thoracotomy for drainage. In each of these two groups there were three retained foreign bodies; and also in each the percentage of shell fragments and bullets as causative agents was approximately the same, so that these factors had no particular significance. Even when doing the work of an evacuation hospital, this organization was considerably farther to the rear than the average evacuation hospital unit, so that in almost every case the radical operations now under consideration were performed before admission here Therefore, it was not possible to judge properly of their value, for the patients who might have succumbed to the shock of the operation would not reach us. Of those who did reach us, two out of the seventeen died, however, seven and thirteen days, respectively, after the original radical "clean-out and closure" operation.

One other word about the treatment in these cases before the patients were received by us. Three cases in which fractured ribs had been resected came to us from the same mobile hospital. Pleural infection had occurred requiring later thoracotomy. In each of these cases at the original operation a single bronze wire rib-stay had been inserted, apparently with the object of filling in the gap formed by the resection of part of the injured rib. This was passed through a hole drilled in at least one of the two ribs splinted. These were not cases of particularly large rib resection, and it was difficult to see that any advantage had been secured. In none of these three cases was the wire attached to the second rib when the patients arrived here. In one of these cases, roentgen examinations revealed the free end extending into a large pneumothorax cavity. This was fortunately within reach through the thoracotomy opening, the loop was severed by a pair of stout scissors under the fluoroscope, and the fragments were removed by forceps. The other two cases were not so favorable, as the wires did not jut into pneumothorax cavities. As the drainage openings were closing satisfactorily, the wires were left in place for later removal under a local anesthetic when the existing process of infection had completely ceased. Whatever the original indication for these rib stays, they proved a troublesome complication in the later progress of the cases. Figures 1, 2 and 3 are roentgenograms of two of these cases.

The treatment in these cases after arrival at this hospital may be considered under two headings: nonoperative and operative. The general procedure with all cases of chest wounds received was to have a

roentgen-ray examination of the chest made at once, even before sending the patient to the wards. In the case of the very sickest patients, one of whom was carried over in a semisitting position in his own bed from a nearby hospital, we had to defer the roentgen-ray examination until later. Whenever possible a stereoscopic pair of plates was taken, as these are by far the most valuable of the roentgen-ray examinations. When possible, fluoroscopic examination was also made, but when neither of these was possible, a single plate of the chest was taken with the patient on his back. One must, however, check up very closely by repeated physical examinations the roentgen-ray findings, and correlate them with the progress of the case. It is not usually practical to have many roentgen-ray examinations in every case, but the patients can be examined physically as often as desired. In general, it is possible to have one or two sets of plates made, and when the facilities are available, it is pure negligence not to use them freely. The ear or percussion finger will not tell the presence or location of a foreign body. Frequently also the skin and subcutaneous tissues are so changed either by hematoma from the blow, by a widespread cellulitis, or again from the presence of subcutaneous emphysema, that the exact conditions present within the chest cavity cannot be entirely determined by physical diagnostic means alone. If any fluid was found in a pleural cavity, an exploration and culture were made at once, unless it was a small amount and the temperature was normal. If sterile and of small quantity, it was not aspirated but examined at four and five day intervals so long as the elevated temperature or any other symptoms of infection continued. In all cases of hemothorax of approximately more than 100 or 200 c.c., it was the practice to aspirate as nearly dry as was possible in the belief that convalescnce would be shortened. In all except two cases, aspiration was deferred to six or more days after wounding.

Fig. 9.—Drainage wound closed; small pneumothorax at left base; good lung expansion; same case as Figure 7; seventy days after thoracotomy.

Aspiration was performed on eighteen patients altogether: eight once, nine twice, and one four times. Never were more than 1,200 c.c. removed at one time, and no cases of infection of the hemothorax occurred as the result of aspiration. The patients were kept in a sitting or semisitting position during the procedure. A careful anesthesia of the skin and parietal pleura with procain was first secured. This is quickly and simply secured, and makes the aspiration painless. When aspiration may have to be repeated frequently, in case the patients are extremely weak and ill, as they often are, every little refinement of technic, especially when so simple, should be used. When repeated aspiration was necessary, its frequency was determined by the amount of fluid present and the symptoms caused by it, such as dyspnea, cardiac excitability, general restlessness, cough and also the persistence of a moderate elevation of temperature. In large collections it was done every day or two until the quantity of the fluid had been markedly reduced; or in moderate sized collections, a second and final aspiration might be layed for a week, as the remaining fluid was often absorbed quickly of itself.

The condition of the blood in the pleura has often varied considerably. It might be fairly thick and uniform, or thin and mixed with clots. Not infrequently the needle had to pass through repeated and firmly fixed partitions of clotted blood in order to reach the intervening layers of the thin fluid blood. If one is not certain of the amount of fluid in the chest, he is apt to stop after emptying a single small pocket and miss the main collection of fluid, for fear of doing damage to the lung by persistent attempts to penetrate to various depths and in various directions the tough wall which he takes to be the visceral pleura. If the patient can be in a semiupright position, held firmly by an attendant so that he can relax; if also one has not unnecessarily excited him to rapid respiration by undue pain; if the needle is sharp, of fairly large bore and rather short point, and if one avoids the obviously dangerous regions, it would seem quite safe to explore thoroughly even if the lung were to be punctured in the process. We have seen no undesirable complications from it and believe that one must persist in the effort actually to remove the fluid when one is sure it is there. Some chests, however, would appear to contain merely a mass of blood clot. There was one such case in this series in which, after several thorough attempts to remove what appeared, on examination, to be a moderately large fluid collection, it was necessary to leave it alone. We have not used the method of replacing the fluid aspirated, in the case of large collections, with oxygen. That would seem to be advisable if it permits the cavity to be more completely drained at a single time; for, though aspiration is simple and not dangerous, the fewer of such procedures needed, the better, particularly in men severely wounded, who are as a rule also thoroughly fatigued.

The nonoperative treatment of infected hemothoraces, and pure empyemas, without hemorrhage, is simple, though considerable judgment is needed to know when and how long to depend on it. In brief, our practice has been to employ repeated aspiration at from one to two day intervals in all cases in which it appeared that patient was too ill for the moment to stand a satisfactory operation for drainage, and when immediate relief was needed. Frequently a rapid, painless aspiration of as much fluid as could be readily obtained, together with a dose of morphin, would give the one or two days of comparative comfort necessary to raise the patient's resistance sufficiently to allow the operation to be done with relatively small danger. In certain cases in which the toxemia did not depend on the quantity of fluid present, or when aspiration, for one reason or another, was not complete enough, free operative drainage in spite of the operative risk seemed best. One cannot rely on nonoperative preliminary aspiration in every case, but must be guided by the particular conditions found in

each case. How long to persist in aspiration if temporary relief is given depends largely on whether the patient's condition can be kept good until the fluid becomes a thick pus and the empyema localizes. There are frequently larger or smaller blood clots which cannot be aspirated and which should be removed as soon as possible, so that when these are present an earlier recourse to operative drainage is wise. Then, lastly, there are some cases in which the patient's excellent condition takes from operative procedure almost all its dread. In these there is no particular reason for delaying it. In brief, then, aspiration in these cases is merely to be used as a bridge of the dangerous gap between the time when some relief is essential but the general condition is too critical for operative procedure, and the time when the patient's resistance has improved enough to stand these more satisfactory measures of relief.

Two types of operation are employed at this stage: The first consists of a wide opening secured by using

Fig. 12.—Perforating shell wound of right apex; compound, comminuted fracture of right scapula; suppurating tract; no pleural infection.

a strong screw rib-spreader. This permits a thorough exploration of the pleural cavity and search for foreign bodies, as well as the removal of infected blood clots. It is not a minor operation and entails considerable shock; but, if there is reason to believe that blood clots are present and the man's condition will permit of it, these should be removed. The same thing applies to all other foreign bodies if they can be reached without unduly increasing the trauma or length of the operation. It would seem to insure a freer drainage and a more certain, shorter and more steadily progressive after-course than the second type of operation; namely, the ordinary thoracotomy with merely the insertion of a double rubber drainage tube. The latter operation has the great advantage of being particularly suitable for the use of local anesthesia and the consequent diminution of shock. When careful anesthesia is produced, it is a comparatively simple operation; but it does not permit of search for the foreign body or cleansing of the cavity of clots. It should be reserved, therefore, either for cases with thin, homogeneous, clot-free fluid or for those cases in which the shock of the more radical operation could not be tolerated.

When shell fragments are present in the lung and there is no infection, they should not be removed except in the rare instance when they seem to be the cause of severe pulmonary hemorrhage. In the presence of infection of the pleura, our limited experience has led us to feel that, although a definite attempt at removal of the foreign body should be made, it should be left in place if not extractable with fair ease, because of the trauma incident to opening up fresh lung tissue. Eleven drainage cases were observed until the operative wound was closed. In three of these in which the shell fragment was present, the average time to closure was forty-two days. In the remaining eight cases without foreign body, the average time to closure was forty-eight days. From these figures it would appear that the presence of missiles in the lung has no retarding effect on the wound closure. Nor is it clear that their presence favors the occurrence of complications such as are dealt with later. Out of our thirty-two penetrating chest wounds, twelve, or 38 per cent., experienced some complication referable to the wounding; whereas of the sixteen perforating wounds only five, or 31 per cent., were complicated. However, of the twelve patients with foreign bodies in the lung when discharged from this hospital, only 33 per cent. were complicated; whereas complications occurred in 39 per cent. of the cases in which the missile was removed. In all these deductions it is necessary to bear in mind that they are based on a very small series. Yet, with this reservation, it is quite possible that they may point the way, in certain disputed questions, to the wiser course to follow. In this instance it would appear that the practice of insisting, in almost every case of infected intrathoracic penetrating wound, that the foreign body be removed at all costs is not wise, and that only in case it can be found with comparative ease and without obvious danger to the patient's condition should search be continued.

PERIOD OF RECOVERY

The period of recovery presents interesting points for consideration. Blow bottles were given to the patients just as soon as they were strong enough to use them. It is my impression that they were of benefit; and although started often at once after operation in the infected cases, we saw no bad effects that might have been laid to too early employment.

In most of the cases the drainage tubes were continued in place, though steadily cut down in length and diameter almost to the time when the wounds were ready to close permanently. In the few isolated cases in which the tubes were removed early, it was necessary to replace them very shortly to reestablish the drainage and reduce the coincident temperature. Careful daily dressings until the temperature is practically normal, the freedom of drainage assured, and its amount largely diminished, are essential. This has included replacing the tube each time by a fresh one. Whether or not to irrigate the cavity, and if so, with what solution, are questions which have received much general attention recently, both in empyema following chest wounds and in the postpneumonic type. In a few cases a gentle irrigation with salt or with surgical solution of chlorinated soda (Dakin's solution) was employed by us each day when the wound was dressed.

Patients were selected with the empyemic cavities circumscribed and apparently well walled off. Three of these patients, however, developed broncho-empyemic fistulas and only by very good fortune escaped serious consequences from the passage of the irrigating fluid

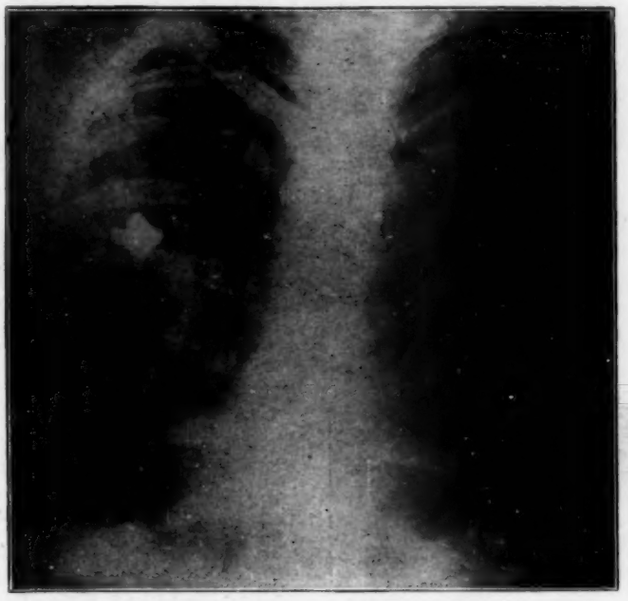

Fig. 14.—Shell fragment in middle of left lung; surrounding consolidation and probable abscess.

into the lung through the fistula. All three patients in whom this complication was noticed remarked that they tasted the solution. Two were thrown into violent fits of coughing and were nearly suffocated for the moment, while the third, though not troubled so much at first, developed a small bronchopneumonia around the fistula as the result of the fluid's irritating presence in the lung at that point. Therefore, although we made no systematic use of empyemic-cavity irrigation, our small experience was unfortunate and suggested that the occurrence of broncho-empyemic fistulas was not infrequent and that they might even be caused by the irrigations.

During the week or ten days immediately following operation for drainage, it was often very difficult to determine with certainty the cause of a persistent elevation of temperature and symptoms of absorption. These symptoms may have been due to retained blood clots blocking good drainage, or to a smaller or larger patch of bronchopneumonic consolidation. With us, it was necessary to consider always the intercurrence of an attack of influenza, as the period covered by this paper was that of the great, world-wide influenza epidemic. Frequent physical examinations, leukocyte and differential blood counts, and especially stereoscopic roentgen-ray plates and fluoroscopic examinations were absolutely necessary to give one a constant and clear picture of exactly the conditions present.

Figures 4 and 5, roentgenograms taken during such periods of uncertainty, show how difficult it is, even with the aid of repeated roentgen-ray examinations, to interpret the symptoms properly. The first case (Fig. 4) is that of a perforating wound of the right upper lobe, complicated by a moderately large hemothorax which clotted badly and became infected. Thoracotomy was done under local anesthesia and the clots were not thoroughly removed. It seemed quite certain that they prolonged the discharge for weeks until entirely digested. During this time it was a constant question whether or not there was some hidden sacculated pocket of pus not draining. The lower portion of the cavity anteriorly, where there was considerable dulness and a roentgen-ray shadow, was frequently needled for fluid but without result. There was also a definite, persistent and clearly outlined shadow in the upper and outer portion of the affected side suggestive of a localized empyema at that point. Being high up in the axilla, it was very difficult to reach even with the exploratory needle, so that exploration was delayed for a number of days. It so happened that about this time the drainage became freer from the thoracotomy wound, the temperature dropped, and the patient began an uneventful recovery. The shadow persisted, however, so we were constrained to believe it was not due to anything other than thickened pleura and that elevation of temperature was caused by the slowly digesting blood clots. The second case (Fig. 5) shown in this connection was somewhat similar, being that of a penetrating wound with a shell fragment lodged in the left upper lobe. No pneumonia, pneumothorax or hemothorax was present, and yet there was a high fever and toxemia for from three to four days after admission. The patient had the same dense shadow in the upper outer region of the left thorax, which was suspected of being a localized empyema. He did have, however, a moderate subpectoral abscess at the wound of entrance. This was drained freely by incision, with a complete subsidence of symptoms, though the roentgen-ray shadow persisted a long time. This is a good example of a case in which no one means of diagnosis could be relied on. The frequent careful use of all should, however, clear up most obscure cases.

Fig. 15.—Large perforating left lung tract surrounded by fibrous tissue; consolidation resolved; good lung expansion. Same as Figure 14 but with foreign body removed.

Eleven of the cases in this series with empyemic drainage wounds were observed up to closure. The shortest time required was thirty-three days in one case, the longest sixty days in one, while the average number of days was forty-seven. As stated before,

those with the missile still in the chest averaged forty-two days, while those free of any foreign body took forty-eight days. It has seemed that the persistence of large clots, not cleaned out at operation, has prolonged the closure.

It was interesting and instructive to watch the change taking place in the chest as the discharge lessened and the time for closure approached. Frequently after the discharge had become scant and thin and the temperature remained normal, the wound would close while a large pneumothorax still persisted. This is well shown by Figure 6. Now and then, however, the pneumothorax contracted gradually down and had practically disappeared when the drainage wound closed.

The final intrathoracic functional disability observed both in the noninfected and the infected cases was surprisingly slight. In sixteen cases of noninfected hemothorax, practically all of which were aspirated nearly dry, 56 per cent. had good lung expansion, 38 per cent. fair expansion, and only one case, or 6 per cent., poor expansion on discharge. In the last case the patient had to be evacuated with a large hemothorax still present. He was heard from two months after leaving our observation, and though he had not been aspirated again, he reported that his lungs gave him no trouble at all and that he felt in excellent health. Of sixteen empyema drainage cases, in eleven of which closure had taken place before the patients were transferred from this hospital, 44 per cent. showed good lung expansion, 44 per cent. fair and 12 per cent. poor expansion. It was particularly interesting to see how quickly the expansion would increase in cases of long standing intrathoracic suppuration with considerable fibrosis. Figures 7, 8 and 9 show this point particularly well.

Fig. 16.—Penetrating shell wound of left axilla; abscess in left upper lobe, draining through wound; no pleural infection.

COMPLICATIONS

Complications directly traceable to the chest wound were present in twenty-four cases, or 45 per cent. They were: bronchopneumonia and lobar pneumonia, purulent pericarditis, general septicemia, secondary hemorrhage, influenza, broncho-empyemic fistula, fibrinous and serous pleurisy, toxic diarrhea and pulmonary tuberculosis. Of these, bronchopneumonia was the most frequent, occurring in eight, or 33 per cent., of all cases. In all except three of this group it was in the opposite lung from the injured side. This does not include the moderate infiltration generally present in the lung tissue immediately about the track of the missile. In one of these cases it appeared that the pneumonia was just enough to cause death in an otherwise thoroughly exhausted patient. In three others which were not fatal it was a serious complication. General hemolytic streptococcus septicemia occurred once, causing death. Purulent pericarditis was present once, causing death. It was hard to detect this condition because a complete unilateral pneumothorax with what appeared to be a resulting displacement of the heart to the opposite side obscured what was really a distended pericardial sac. The partially collapsed lung on the pneumothorax side was another source of error appearing to account for the altered cardiac roentgen-ray shadow on that side. In this case, unfortunately, no audible signs of pericarditis were detected at any time. Figure 10 shows the conditions in this case. There was one case of intrathoracic secondary hemorrhage from intercostal vessels, causing death. The two cases of broncho-empyema fistula have already been mentioned. One of these patients left us with his drainage wound healed, and the patient gaining daily in strength. The other patient's wound was still open. The drainage in this case was not as favorable, so that it will undoubtedly take longer to heal. In the one case of diarrhea included here, no organism could be found in the stool. The condition persisted until drainage of an infected hemothorax was provided, after which it cleared up promptly. The infecting agent in the thorax was the bacillus of influenza. It was a late infection of a previously sterile hemothorax, very probably of the same origin as the severe accompanying bronchitis, although unfortunately the predominating organism in the bronchial secretions was not determined. The diarrhea appeared to be definitely of toxic origin.

In connection with this case of influenza infection of a hemothorax, there was one other case which developed quite late a bronchopneumonia in the left lower lobe, which had been the seat of a penetrating wound. Influenza bacilli in pure culture were recovered from the sputum. A moderate serous effusion occurred in the left pleura but continued sterile, and after one moderately large aspiration it was absorbed without further trouble.

Moderate and severe attacks of influenza occurred in six cases. They were without serious consequence, but were of interest as the aching, which in a non-wounded man is especially noticeable in the arms and legs and back, were in each of these cases especially referred to the region of the wound. It was often difficult at first to differentiate an attack of influenza from a pocketing of pus within the injured chest cavity. In influenza complications, however, the negative findings by roentgen ray and the usual low leukocyte count of influenza were of great differential assistance.

In only one of our cases was pulmonary tuberculosis found. This was in a young man (without pre-

vious tuberculosis history) who sustained a perforating wound of the left upper chest shattering the clavicle and scapula. The pleural cavity became infected and required thoracotomy and drainage. The patient was admitted to us ninety-six days after wounding. At that time he showed at the opposite apex a very generally scattered tubercular infiltration. The bacilli of Koch were present in the sputum. He was emaciated and presented a sharply remittent fever which reached each day between 103 and 104. It was suggested that this had probably been a hematogenous infection from some previously moderately quiescent focus in the wounded lung. It is one of the very few similar cases observed among the wounded of the American Expeditionary Forces. The roentgen-ray findings in this case are shown in Figure 11.

MORTALITY

In considering the mortality, reference should be made again to the fact that during the period covered by this paper this unit acted for a time as an evacuation hospital, and also that more than one third of the deaths occurred within twenty-four hours after admission from a nearby hospital compelled to close and transfer all its cases. If we consider these facts, the otherwise high mortality of 15 per cent. is better understood. Of the eight deaths, the average day of death in four cases was the thirty-third day after wounding; in two other cases the average day of death was ten days after wounding, and for the remaining two the figures were not available. Three patients died within twenty-four hours after admission, one four days after, and one each on the ninth, tenth, fifteenth and sixteenth day.

Fig. 17.—Large shell fragment in abscess of left upper lobe; consolidation above; lower lobe normal. Same case as Figure 16.

Eleven per cent. of our patients wounded by shell fragments died, while only 5 per cent. of the patients wounded by bullets died. All of the eight deaths occurred in infected cases. The causes of death were as follows: bronchopneumonia occurred twice, shock twice, while lobar pneumonia, purulent pericarditis, postoperative intercostal hemorrhage and *Streptococcus hemolyticus* septicemia each occurred once. Our statistics did not show any direct connection between the type of organism present and the percentage of mortality. Seventy-five per cent. of the cases resulting fatally were complicated. Of the cases in which recovery took place, only 33.3 per cent. showed such complications. The complication in the fatal cases seemed to be the direct cause of death. The two important deductions are, therefore, a reiteration of already well-known facts, that shell wounds are far more serious than bullet wounds, and that complications are much to be feared because of their high mortality.

Apart from the groups of cases already considered, there were a few special conditions of considerable interest. One was a perforating wound of the right upper chest near the shoulder, comminuting the scapula badly. Figures 12 and 13 show the outward appearance of the wounds and the intrathoracic condition. For a number of weeks there was a continuous tract through the chest. This gradually cleared, fibrosed, contracted to a cord, the surrounding traumatic consolidation resolved, and the wound closed satisfactorily. The other two were penetrating wounds. In one case (Figs. 14 and 15) with a posterior wound of entrance, two pieces of shell were found close together toward the anterior surface of the left lung just above and inside of cardiac apex. They were removed by anterior incision, a complete perforating tract being formed. The pleura remained uninfected and the same course was followed to closure as in the first case. The second penetrating wound case showed a piece of shell 1.5 by 0.5 by 4 cm. in size which had entered high in the left axilla and penetrated deeply into the upper lobe of the left lung, forming a lung abscess but sparing the pleural cavity. Figures 16, 17 and 18 should be seen in this connection. The fragment was removed and drainage improved. The abscess had contracted greatly when the patient was transferred.

One more freak case showed a great deal of the lower sternum and the sternal attachments of the right and left lower ribs shot away in such a manner as to produce a gutter wound. The mediastinal space was open for an area of 4 by 8 cm., showing clearly the outer surface of the parietal pericardium. The heart beat was clearly visible. Each pleural cavity contained between 50 and 100 c.c. of thin, slightly bloody, sterile fluid; but only a moderate superficial infection of the wound occurred which quickly cleared, the pleura and pericardium escaping entirely.

In this series there were only two cases in which *Bacillus aerogenes-capsulatus* was present in pure culture in the hemothorax. One of these men was wounded twenty-seven days before operative drainage was finally provided. When admitted, he was in great distress and pain from intrathoracic pressure. An aspiration of 500 c.c. of bloody purulent fluid gave no relief. Unfortunately, the needle was still below the upper level of fluid and so did not afford direct relief of air tension. After the aspiration there did not seem to be a great quantity of fluid left, but the intercostal spaces continued to bulge. It was only when free drainage by thoracotomy was provided that relief came. From observations in this case we were inclined to believe that the gas bacillus had been the positive agent in producing the increased intrathoracic tension. The second case of pure culture, although it was over two weeks after wounding before thoracotomy was done, showed no undue intrathoracic tension. Nor was this present in four other cases in which this organism was mixed with the hemolytic and nonhemolytic streptococcus.

The symptoms experienced immediately after wounding agreed entirely with those so often and so

well reported elsewhere. Generally there was the sensation of a heavy blow followed by dyspnea, cough and frequently hemoptysis, which was generally moderate and lasted only a few days. Now and then it was severe or continued for a week or two. We have no information as to how often the hemorrhage was

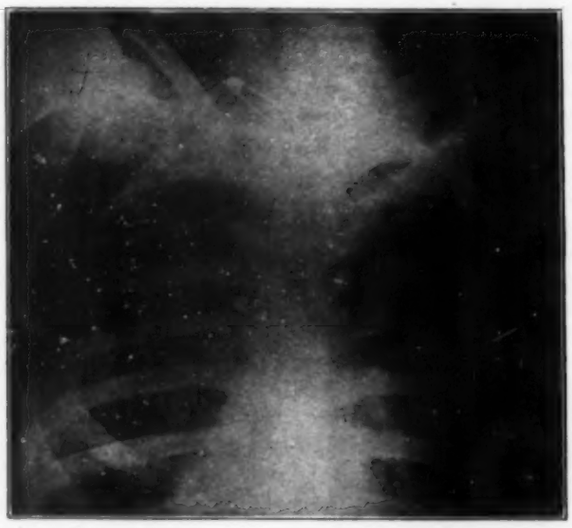

Fig. 18.—Apical consolidation resolved; foreign body removed; fibrosis about cavity; good lung expansion. Same case as Figure 16.

fatal. There was occasionally profound weakness and fainting or temporary weakness from which recovery was rapid. Very frequently in clean perforating bullet wounds the lack of symptoms was extraordinary. Men reported having walked alone or with assistance as much as five miles before collapsing.

CONCLUSION

The following facts seem fairly clear: The diagnostic means of needle puncture and stereoscopic and fluoroscopic roentgen-ray examination should be freely employed. As a nonoperative measure, repeated aspiration has a very important place in the treatment if judgment is used in employing it. In cases requiring merely thoracotomy and drainage or when this is all that can be attempted, local anesthesia with 1 or 2 per cent. procain is of great value. On the contrary, when large infected clots are present and the man's condition will permit it, a more radical operation is to be preferred. Foreign bodies in the lung are tolerated with unusual ease both in noninfected and in infected cases, so that, whereas, in the latter cases, an attempt should be made to remove them, no great dread need be entertained, so far as our early information goes, if they must be allowed to remain. It is most encouraging to see how much lung expansion can occur even after the severest injuries and infections within the pleural cavity.

We cannot yet say with certainty what is the best type of early operative treatment for these cases. This question (and many others still obscure) is bound up inextricably with the as yet unsolved administrative difficulty of providing special hospitals for thoracic wound cases near enough to the front that a sufficient number of patients can be sent there directly after being wounded and kept there under continuous observation during their entire convalescence.

SUMMARY OF FIFTY-THREE CASES OF INTRATHORACIC WOUNDS

	No. of Cases	Percentage
Mortality	8	15
Perforating wounds	16	30
Penetrating wounds	32	60
Wide open wounds	3	6
Type unknown	2	4
Sterile hemothorax	17	32
Pyohemothorax	23	43
Wounds due to shell fragments	28	53
Wounds due to bullets	21	40
Type of missile not known	4	7
Missile in lung when patients were transferred	12	38*
Missiles removed	20	62*
Presence of complications	19	36

* Of penetrating wounds.

FALSE PNEUMOTHORAX*

B. P. STIVELMAN, M.D.
Medical Superintendent, Montefiore Home Country Sanatorium
BEDFORD HILLS, N. Y.

Few localized pneumothoraces can be diagnosed without the aid of the roentgen rays. Indeed, most recent observations on interlobar pneumothorax[1] and pleural and pulmonary annular shadows[2] are based solely on the routine roentgenologic study of patients suffering from pulmonary diseases.

There are rare cases, however, in which a rapid roentgenologic examination may suggest a localized pneumothorax or hydropneumothorax, when in reality neither condition exists. French writers, who were among the first to recognize this condition, applied the term "faux pneumothorax" to these supposed roentgenologic aberrations. These false pneumothoraces do

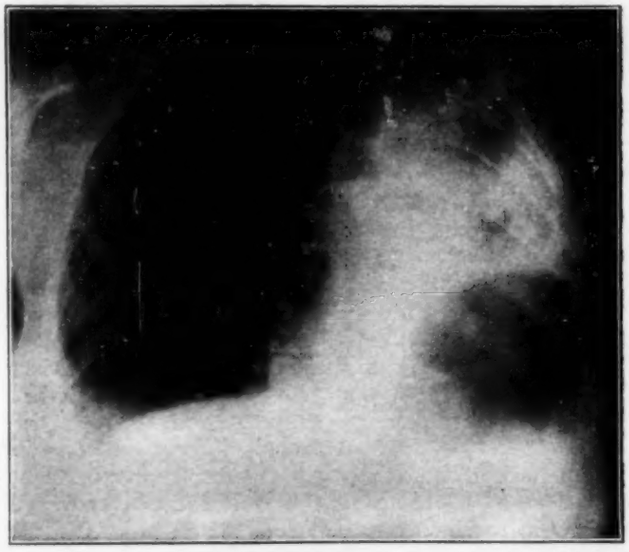

Fig. 1.—Apparent hydropneumothorax at left lower lobe, showing advanced fibroid changes throughout the left lung suggesting evidence of multiple cavitation, with the heart drawn markedly to the left and upward.

not cause any definite subjective symptoms, and the physical findings over the area involved are those of

* From the Montefiore Home Country Sanatorium.

1. Fishberg, Maurice: Localized and Interlobar Pneumothorax Complicating Pulmonary Tuberculosis, Arch. Int. Med. **20**: 739 (Nov.) 1917.

2. Sampson, H. L.; Heise, F. H., and Brown, Lawrason: A Study of Pulmonary and Pleural Annular Shadows, Am. Rev. Tuberc. **2**: 664 (Jan.) 1919.

thickened pleura with retraction of the lung tissue. There is usually a fluid level in the region of one or the other of the lower lobes of the lung, where these pneumothoraces usually occur. Their appearance either fluoroscopically or on flat or stereoscopic plates is characteristic of localized hydropneumothorax.

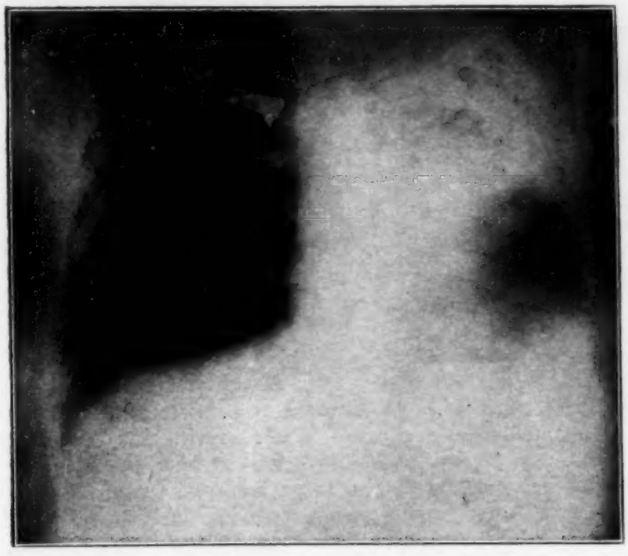

Fig. 2.—Same patient six months later, showing the fluid level of the apparent hydropneumothorax one inch higher after the ingestion of 16 ounces of water.

Careful observation, however, will disclose the fact that such air collections are extrathoracic and are situated below the diaphragm, which is either pushed or drawn high up into the hemithorax. When situated at the right lower lobe, such gas collections are frequently due to a subdiaphragmatic abscess. The gas formed pushes the diaphragm high up into the thoracic cavity, thus causing the adjacent lung tissue to collapse. When situated at the left lower lobe, they very frequently are due to extreme pulmonary fibrosis with marked upward traction of the diaphragm, and to a more or less dilated stomach. In the former instance the fluid level is caused by the gas-containing abscess, and in the latter instance by the stomach contents.

The paucity of reports of this condition in the literature prompts the recording of all such cases, for by so doing a great deal of inconvenience and some danger may be avoided when considering exploratory puncture. Lebon relates one such instance from his service at the military hospital at Buffon. A soldier's stomach, which was punctured for diagnostic purposes, was found drawn high up into the thorax, thus simulating an intrapleural fluid and air-containing space. It is reasonable to assume, however, that such instances occur more often than the number of reports on the subject would indicate.

I observed a case of pulmonary tuberculosis in which the lesion at the left lower lobe had been interpreted, at a hospital for the tuberculous, as a thickened pleura with retraction of the diaphragm. After a physical and roentgenologic examination of the patient, on her admission to our sanatorium, a diagnosis of pulmonary tuberculosis, complicated by spontaneous localized hydropneumothorax, was made (Fig. 1). Many months of observation and ultimately a more careful roentgenologic examination proved that the supposed hydropneumothorax was a markedly retracted stomach.

REPORT OF CASE

S. K., aged 27, admitted to our institution in February, 1919, gave a typical history of pulmonary tuberculosis, with recurrent attacks of chills, fever, sweats and hemoptyses, extending over the previous five years. Physical exploration of the chest disclosed evidence of consolidation and marked cavity formation of the upper half of the left lung with a very dull note on percussion and feeble breathing over the left base. Neither splash nor coin sign could be elicited. The condition at the left base was thought to be the result of a thickened pleura. The right upper lobe showed evidence of moderate tuberculous infiltration. The heart was drawn upward, markedly to the left. Fluoroscopic examination of the chest confirmed the physical findings in general, but instead of the thickened pleura at the left base we were astonished to find a marked hydropneumothorax. A roentgenogram (Fig. 1) taken the same day confirmed the fluoroscopic findings. The patient's general condition improved during the following six months, and repeated physical examinations during this period disclosed no evidence of the existence of the hydropneumothorax, although the roentgenogram disclosed the same condition as seen in the first examination.

Contrary to expectation, the air in the supposed pneumothorax was not absorbed to any appreciable degree. Furthermore, the fluid level varied with the ingestion of food, being higher after a full meal (Fig. 2), lower before breakfast, and entirely absent on fasting (Fig. 3). This prompted us to give the patient a barium meal which, on fluoroscopic observation, was seen to reach the supposed hydropneumothorax and cause a splash and distortion of the fluid level. Capsules filled with barium were seen to enter this air pouch and rest on the fluid level before disintegration (Fig. 4).

COMMENT

When these false pneumothoraces occur on the left side they must be differentiated from transdiaphragmatic hernias, which, with the exception of the few congenital cases reported in the literature, are almost invariably due to extensive shrapnel, gunshot and stab wounds, and give rise to acute symptoms, as dyspnea,

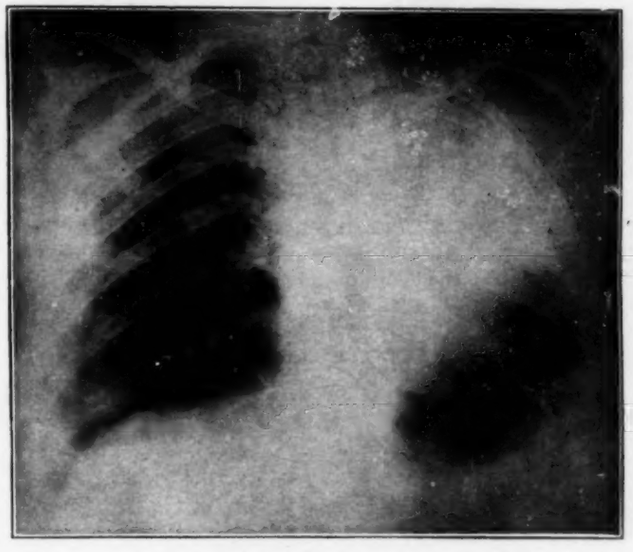

Fig. 3.—Same patient after fast of fourteen hours, showing absence of fluid level in the air-containing space at left lower lobe.

hemoptysis, hematemesis, fever and chills, which are referable to both the left lung and the stomach. Before the roentgen ray was extensively employed, a diagnosis was made in many such cases following a history of injury, tympanitic note over the area involved, or most often as a result of the protrusion of some of the abdominal contents through the wound in the chest

wall.[3] A transdiaphragmatic hernia may be recognized roentgenographically by the appearance of part of the stomach above the diaphragm and part below.

Patel and Jaboulay,[4] however, assert that a number of diaphragmatic hernias present no clinical histories, but are discovered at necropsy. It is reasonable to assume that these observers referred to the congenital form of this condition, for recent reports would indicate that all traumatic diaphragmatic hernias give rise to unmistakable symptoms which are usually corroborated by careful roentgenologic examinations.[5]

Extrapleural pneumothorax at the site of the needle puncture has been described by Gwerder,[6] who reports a case of pneumothorax in which a large gas pouch was formed extending from over the fifth to the eighth rib in the left anterior axillary line, presumably the result of high intrapleural pressure. The pouch, which distended on coughing and sneezing, could be reduced by firm bandaging.

Barjon and Courmont mention a case in which it was doubtful whether the diagnosis should have been

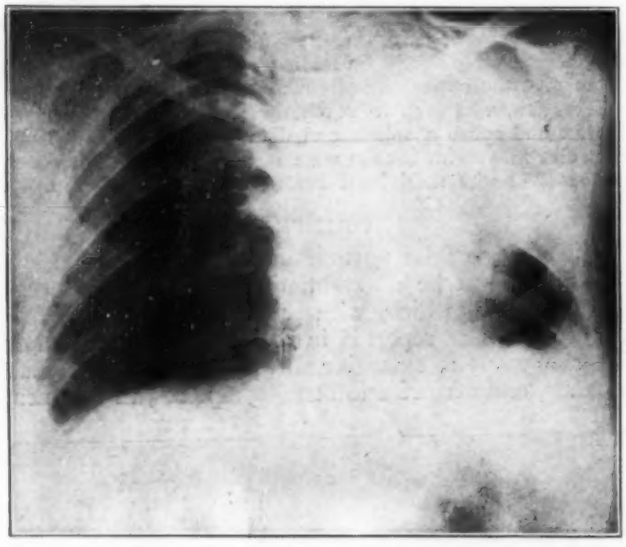

Fig. 4.—Same patient, showing height of fluid level after drinking about 24 ounces of fluid, with a barium capsule projecting from the fluid level about five minutes after it was taken.

pyopneumothorax or retracted stomach. Lebon[7] describes two cases of false pneumothorax, and more recently Aimé and Solomon have reported a case in a tuberculous patient.

The diagnosis in such conditions should present no great difficulty when it is borne in mind that:

1. These extrapleural air pouches are characterized by their failure to absorb the gas they contain. A true pneumothorax tends invariably to spontaneous absorption.

2. The height of the fluid level in a false hydropneumothorax varies most decidedly with the ingestion of food and with the emptying of the stomach. The fluid disappears on fasting.

3. By means of the fluoroscope a barium bolus may be seen to enter the supposed hydropneumothorax, causing a splash and distorting its fluid level.

4. A localized hydropneumothorax may be simulated by the diaphragm and stomach, when they are in a high position due either to extreme pulmonary fibrosis or gastrectasis. This possibility should be considered when an exploratory puncture is contemplated.

3. Davis, H.: Diaphragmatic Hernia, Internat. J. Surg. **28**: 120, 1915.
4. Patel and Jaboulay, quoted by Aimé, P., and Solomon, J.: Am. J. Roentgenol. **6**: 376 (Aug.) 1919.
5. Aimé and Solomon (Footnote 4). Sanderson-Wells, T. H.: Brit. M. J. **2**: 687 (Nov. 24) 1917.
6. Gwerder, J.: Extrapleural Pneumothorax, Cor.-Bl. f. schweiz. Aerzte **46**: 1618 (Nov. 25) 1916.
7. Lebon, H.: Faux pneumothorax, Presse méd. **36**: 351 (June 26) 1919.

RADICAL ABDOMINAL HYSTERECTOMY FOR CANCER OF THE CERVIX UTERI

A REPORT OF END-RESULTS, SHOWING AN UNUSUALLY LARGE PERCENTAGE OF FIVE-YEAR CURES *

FARRAR COBB, M.D.
BOSTON

This report of end-results in the radical abdominal hysterectomy for cancer of the cervix uteri is made with much satisfaction. It deals with a series of sixty cases, not a very large number as compared with that of some operators, but large enough to prove that cancer of the cervix may be cured in a large percentage of cases by the properly performed radical operation. I have had 57 per cent. of five-year cures in my personal work as shown here, and an operative mortality of 11.6 per cent.

RADICAL HYSTERECTOMY AS A CURATIVE MEASURE

I fear that the report of such a large percentage of five-year cures may be received with skepticism by some, especially by those who have doubted the curability of this disease; and I am compelled to state that in following up my patients, the number of those alive and well for many years after operation has surprised as well as pleased me.

All the cases were undoubted cancer of the cervix clinically, and in all cases but one there was a corroborative microscopic diagnosis made by a pathologist of established reputation, in almost all instances by one of the pathologic staff of the Massachusetts General Hospital. It has been possible to follow up every case, and each patient has been examined by myself periodically.

The cases were by no means all selected favorable ones, and there were only two cases of very early microscopic diagnosis. On the other hand, the majority were hospital cases of varying extent, many of them more than moderately advanced cases of cancer, and a few were borderline cases in which the hope of cure by operation seemed very small (Cases 1, 6, 9, 21, 24 and 30).

I want to emphasize by means of this paper the fact that the radical abdominal operation will cure cancer of the cervix in a large number of cases, and that in skilled hands it should cause no excessive operative mortality.

For many years I have been working, writing, lecturing on cancer of the uterus: its early diagnosis, the need of pathologic examinations, and the value of radical hysterectomy as a curative measure. It is borne

* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of the report of cases. The complete article appears in the reprints, a copy of which may be obtained on application to the author.

in on me, however, that many medical men and even many surgeons still doubt its curability by operation, and that many patients seen sufficiently early to have a good chance of cure by hysterectomy are treated by radium or by the ill-advised Percy cautery method. It is absolutely certain that radium and the cautery cannot cure cancer of the cervix, no matter how valuable they may be as palliative treatments in the inoperable cases. The danger of the widespread exploitation of radium and the Percy method of cautery treatment is the depriving of certain persons of a chance of life by the only curative procedure, namely, hysterectomy.

My personal work on the whole question of cancer of the uterus in its different forms, its cure and its palliation, covers a period of twenty years. I performed my first hysterectomy in 1901, and it is interesting to note that this patient, my first case, operated on in my younger and more inexperienced years, is one of the cured cases today, being alive and in perfect health eighteen years afterward (Case 1). For several years, as one of the surgeons at the Massachusetts General Hospital, I held the special assignment of cancer of the uterus, seeing and operating on all the patients that came into the wards, both those with cancer of the body of the uterus and those with cancer of the cervix. In 1912 and again in 1914 and 1915, I published papers reviewing my work at the hospital and analyzing a series of 420 cases admitted to the hospital in the fifteen years from 1900 to 1914, including ninety-eight cases of my own. These papers deal with the general questions of operability, diagnosis, choice of operation, palliative treatment, etc.[1]

In this paper, I wish to consider only my personal work in radical hysterectomy and the end-results thereof, including a summary of each cured case, touching briefly on the technic of the operation and the lessons that experience has taught me.

I have performed personally sixty radical abdominal hysterectomies, what generally are called Wertheim operations, but differing from Wertheim's method in certain essential modifications of my own which, while making the operation none the less radical, make it somewhat safer. Thirty-one of these operations were performed at the Massachusetts General Hospital and twenty-nine in my private practice. Thirty-five were performed more than five years ago, previous to 1915, and of these, twenty-six were hospital cases. My percentage of five-year cures has been 57.1. An analysis of my end-results in detail will be given at the end of this paper.

Among the sixty cases, there were seven operative deaths, a mortality of 11.6 per cent. One death from intestinal obstruction occurred two months after the operation and, therefore, might be omitted; but owing to the fact that the patient had not left the hospital, I have included this case in my immediate mortality, as also one other patient who died in the sixth week of septic iliac thrombosis. Five deaths occurred among my first thirty cases; but in my last thirty cases, only two: a reduction in mortality commensurate with steady improvement in technic. Three patients died from shock, largely caused by hemorrhage. The control of hemorrhage, especially toward the end of the operation, is one of the most important technical questions. Two patients died of general peritonitis.

The operation comprised the removal of the uterus and a liberal portion of the vagina, with as much of the parametrium as possible, through a median abdominal incision, with ligation of both internal iliac arteries and removal of the regional glands when enlarged and palpable. It is a difficult operation and should be performed only by trained surgeons; but in such hands, it should not involve an excessive mortality, certainly not over 15 per cent. In my whole series of sixty cases, it was 11.6 per cent., and in my last thirty cases, only 6.6 per cent. Wertheim's mortality, in his last series of cases, was 12 per cent.

The operation should not be performed in the presence of marked obesity or debility. A renal function of 25 per cent. or less would contraindicate the method.

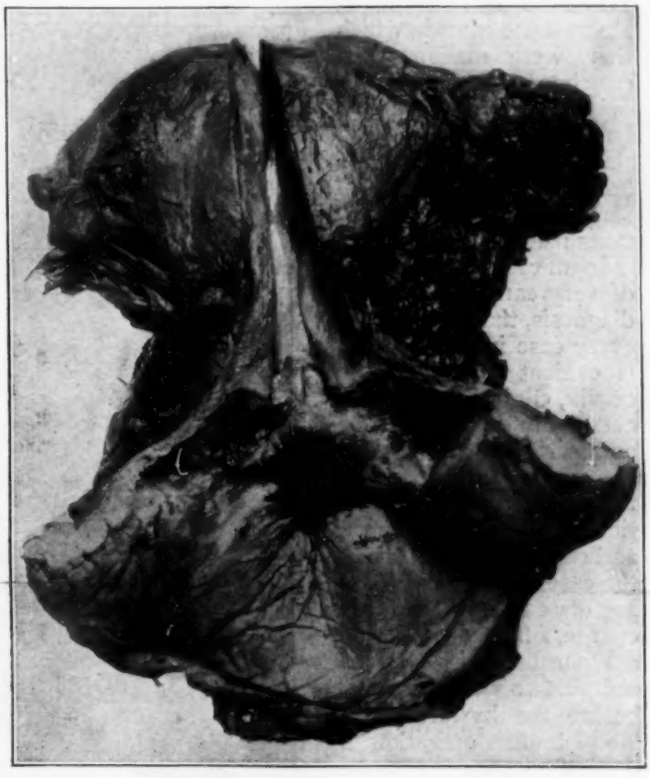

Fig. 1 (Case 16).—Anterior view of specimen, showing wide removal of parametrium.

With very fat or feeble patients, the more rapid and safer, but far less curative, simple vaginal hysterectomy should be the method of choice. The radical vaginal hysterectomy of Schauta and Schuchardt I have found more dangerous and difficult than the abdominal method, and the postoperative sequelae distressing.

CASES FAVORABLE FOR CURE

Undoubtedly, the most favorable cases for cure are those in which a microscopic diagnosis has been made very early; but in some of these cases I have had rapid local implantation recurrence.

In many cases, one cannot be sure whether fixation of the uterus and induration in the broad ligaments will make a curative operation impossible until one has opened the abdomen, because, in a definite percentage of cases, the fixation and induration may be due to inflammatory conditions and not to cancer; and even

1. Cobb, F.: Cancer of the Uterus, Boston M. & S. J. **167**: 37 (July 11) 1912; Cancer of the Uterus, The Possibilities of Cure by the Radical Abdominal Operation, Certain Original Methods of Operating, Including an Analysis of 367 Cases at the Massachusetts General Hospital, ibid. **170**: 861 (June 4) 1914; The Surgical Treatment of Cancer of the Cervix Uteri, ibid. **173**: 89 (July 15) 1915.

if due to cancer, a cure may be possible. Frequently, an exploratory incision is all-important in determining the possibilities of a cure, and no man, no matter how large his experience, has a right to condemn a patient without this. The possibility of cure in advanced cases, in which an exploratory incision has determined my course of action, is definitely illustrated by some of my own cured cases.

Marked involvement of the vaginal wall contraindicates a curative operation, as does enlargement of the inguinal glands. If, when the abdomen is opened, the sacral glands are found enlarged, there is no hope of a cure. But enlargement of the iliac and obturator glands does not so contraindicate because these frequently may be enlarged without being cancerous. When palpable, they should be removed. I have removed the iliac and obturator glands in about one half of the cases. In most of the cases, they were not found to be malignant; but in those cases in which they were malignant, a cure has not been obtained. My experience with the lymphatics and small glands in the parametrium, however, is decidedly different; here metastasis takes place very early.

In all cases except those of very early microscopic diagnosis, that is to say, in every case in which there is evident cancer of the cervix, clinically, I use the actual cautery, destroying and sterilizing the cervical portion of the uterus as the first step of one operation in the least advanced and offensive cases; but in the cases of large, fungating disease with foul discharge, I have done this as a separate operative procedure, two weeks or more before the hysterectomy. This double operation I deem wise also with those patients that have lost much blood; in such cases, the period of waiting after the hemostatic cauterization is valuable in restoring strength and hemoglobin. In the last two years, I have abandoned the Percy theory as to the efficacy of a low or moderate degree of heat in using the cautery. In my opinion, this theory is fallacious, the use of the red-hot cautery point to destroy completely the diseased area being the only rational method. I have found also that other forms of the electrogalvanic cautery, soldering irons, or the old Paquelin type of cautery are safer and easier to use than the large instrument devised by Percy, the danger of burns of the vulva, bladder and vagina being much less, even though a water-cooled speculum is used.

Fig. 2 (Case 16).—Posterior view of specimen.

AUTHOR'S TECHNIC

The technic of my hysterectomy has not changed in its essentials since my last published paper in 1915. The whole element of success in the operation lies in the wide removal of the parametrium. Unless this is done, recurrence is almost certain in the lateral areas along the pelvic wall, because, although the iliac and obturator glands are involved late, the lymphatics in the parametrium become cancerous very early, and any operation leaving an infected parametrium is noncurative. There are, in my series of cases, a number in which the iliac glands were enlarged and found nonmalignant, but in which a study of the removed parametrium showed cancer. The point of the whole operation is to dissect and isolate so freely the ureters, the bladder and the rectum that a large portion of the parametrium may be removed.

The operation is always long; two hours is a small allowance of time, and in cases that are difficult because of obesity or complicated by pelvic inflammatory disease with adhesions, or in those in which obstinate venous hemorrhage is encountered, much more time will be needed.

The choice of the anesthetic and the employment of a skilled anesthetist are very important. Ether is the anesthetic of choice, but I have used, whenever possible, a combined ether and spinal anesthesia, using a moderate sized intraspinal injection of tropacocain or procain to block off the pelvic operative trauma. After using this method in many cases, I am sure that shock, the chief cause of death in this operation, has been much lessened. Not only has a marked difference been noted in the amount of shock when this method has been used as compared with the cases in which ether alone has been the anesthetic, but also the patients have had much less postoperative disturbance.

The incision has been a median one, extending down to the symphysis pubis and well above the umbilicus. Considerably more room may be gained by dividing transversely the anterior sheath of the rectus muscles, or in the more difficult cases their tendinous insertions to the pubis. Repair may be rapidly and efficiently done at the end of the operation.

The dissection and handling of the ureters, freeing them completely from the parametrial tissues, is the most important technical part of the operation. The ureters should be so free that they may be lifted up and out of the pelvis, at the same time preserving their blood supply, thus avoiding necrosis and urinary fistula. The use of intra-ureteral bougies is ill advised because unnecessary and time consuming, and it is also dangerous since the bougies prevent free displacement of the ureters. It is my practice to use tapes to lift the ureters up and out of the way, a method described and illustrated in previous papers, by which I feel that the maximum amount of safety may be obtained in dissect-

ing the vesical end of the ureters, freeing the bladder and rectum, and excising the parametrium. While a reasonable degree of care must be used in handling the ureters, so as not to cause necrosis, they have been in all my cases freely retracted and elevated out of the pelvis, and in none has a urinary fistula from a damaged ureter followed. I have had only two urinary fistulas: in one case, a temporary vaginal leak following a suture of the bladder; and one other, in a case of anastomosis of an accidentally cut ureter. This patient subsequently came to nephrectomy. This freedom from ureteral fistulas, in the light of the reported experience of other operators, has surprised me.

RESULTS IN SIXTY CASES OF RADICAL ABDOMINAL HYSTERECTOMY

Total number of radical hysterectomies	60	
Hospital cases	31	
Private cases	29	
Operated on previous to 1915	35	
Operative deaths	7,	or 11.6%
Operative deaths in last 30 cases	2,	or 6.6%
Number of cases traced	All	
Alive and well over 5 years	20	
Alive and well over 4 years	3	
Alive and well over 3 years	3	
Alive and well over 2 years	7	
Alive and well over 1 year	2	
Summary of operations previous to 1915:		
Total number done over 5 years ago	35	
Hospital cases	26	
Private cases	9	
Operative deaths	5	
Recurrences	10	
Alive and well over 5 years	20	
Percentage of cured cases	57.1	

After the ovarian arteries have been ligated, and the broad ligaments opened, the peritoneum being split well above the bifurcation of the iliac arteries, the ureters are exposed lying in their sheaths on the inner or posterior layers of the broad ligaments. The internal iliac arteries are then ligated with catgut, after which the posterior layers of the broad ligaments are incised below and parallel to the ureter, midway between the bifurcation of the iliac arteries and the uterus; and through this slit in the broad ligament, tapes one-half inch wide are passed, traction on which rolls a protecting cuff of peritoneum around the ureters. With such protection, considerable traction can be made safely on the ureter. In cases complicated by inflammatory disease, dissection of the ureters is always more difficult, and the preservation of the broad ligament often impossible; but in such cases, I have had no evil consequences from the use of the tape tractors.

The accidental cutting across of a ureter is a very serious matter, one requiring fine judgment and experience to determine the subsequent procedure in each case: The extra time required to anastomose the severed ends or preferably, when possible, to implant the proximal end in the bladder, may be the cause of death from shock. I have divided the ureter inadvertently twice: one patient died from shock distinctly contributed to by the time required to anastomose the ureter; in the other case, the patient recovered, but the anastomosis was not a success and a urinary fistula and infection of the kidney resulted, necessitating nephrectomy later. This woman is alive and in perfect health today, four years afterward (case of Mrs. F. B., sent me by Dr. MacDougall of Haverhill, Mass., and operated on in 1915). Rather than subject the patient to the extreme added risk of death by taking time for ureteral anastomosis or implantation, one would be justified in ligating both ends of the divided ureter and staking the recovery of the patient on the functional capacity of the other kidney for the time being.

The most discouraging recurrences are the ones of early implantation metastasis. When such metastasis occurs, one should always suspect faulty technic in amputating the vagina. Necessary precautions against this form of recurrence are the thorough destruction of the diseased cervix by the preliminary use of the cautery, scrupulous disinfection of the vagina with iodin, and use of the double right-angled vaginal clamps and a cautery knife in cutting through the vagina.

After the uterus and upper half of the vagina have been freed from the bladder and rectum, the ureters should be lifted well out of the way by the tapes, and the lateral parametrium from above the internal os, well down the sides of the vagina, should be removed with scissors as close to the pelvic wall as possible. It is at this stage of the operation that one is liable to have trouble with obstinate hemorrhage. I have learned that this part of the operation may well be dreaded as time consuming. After the operation has been completed to all intents and purposes, checking this venous hemorrhage may cause a delay of over half an hour. The use of properly designed right-angled artery clamps is valuable in securing hemostasis deep down in the pelvic hole at this time. Ligation of the internal iliac arteries at an early stage of the operation is a decided help in lessening hemorrhage, and I am certain that it does not in any way increase the chance of postoperative sepsis or sloughing, or cause postoperative cystitis.

Vaginal drainage by a small gauze wick or a cigaret drain has always been used.

A summary of the results obtained in my series of sixty radical abdominal hysterectomies is given in the accompanying table.

419 Boylston Street.

A BENZIDIN-POLYCHROME STAIN FOR BLOOD*

F. A. McJUNKIN, M.D.
MILWAUKEE

For the accurate identification of endothelial leukocytes in blood smears, I have published an earlier report[1] of a staining method employing the so-called "oxydase or peroxidase" reaction. In this method the reagent employed was alphanaphthol, which brings out a blue granulation in the cytoplasm of the reactive leukocytes. Since the granulation is blue, a red nuclear stain was chosen; and the fact that the dilute basic fuchsin solution colors nuclei rather lightly detracts from the value of the stain. A second disadvantage of this earlier method is that the differential coloring of the blood elements in general which has brought the polychrome blood stains (Wright's and others) into universal use is not obtained. The greater accuracy in the identification of the leukocytes secured by the benzidin-polychrome combination, together with the preservation of the blood picture that hematologists now are so accustomed to, will, it is believed, make it of distinct clinical value in the examination of pathologic human blood.

* From the Department of Pathology, Marquette University School of Medicine.

1. McJunkin, F. A.: Differential Blood Count, Arch. Int. Med. 22: 157 (Aug.) 1918.

The method described in this article combines the "oxydase" reaction, which brings out the leukocytic granules, with polychrome staining of the remainder of the blood elements. The method, an account of which was published by Graham,[2] suggested to me the combination of benzidin and a polychrome stain. For fixation, Graham uses formaldehyd-alcohol, which does not permit of polychrome staining, as the corpuscles retain a deep blue color that cannot be washed out, and the nuclei stain blue. It was found that methyl alcohol of 80 per cent. strength made by adding 5 c.c. of distilled water to 20 c.c. of Merck reagent methyl alcohol, which is about 99.5 per cent. concentration of alcohol, preserves the leukocytic granulation so that smears fixed in it may be stained by Wright's or other polychrome stains, and the success of the benzidin-polychrome stain rests largely on this observation. The only precaution necessary is that the blood smears be allowed to dry for an hour or more before being stained.

BENZIDIN-POLYCHROME STAIN

The method which has now been used in this laboratory for several months on human and animal blood is as follows:

On a 22 mm. square cover glass (No. 1) 4 drops of 80 per cent. methyl alcohol, to 25 c.c. of which there has been added 100 milligrams of benzidin (Merck or that obtained from the Will Corporation) and one drop of hydrogen peroxid, are placed for thirty seconds; this is diluted with 8 drops of distilled water, and the diluted solution is allowed to act for four minutes. The solution is then washed with distilled water and blotted between filter paper; 4 drops of distilled water and 4 drops of polychrome stain (Wright's blood stain) are added, the diluted stain is allowed to act for four minutes, and then it is washed, blotted, dried in the air, and mounted in balsam. All solutions are dropped from similar bottles, with or without a snout-leak, and not from pipets. The benzidin solution keeps for several weeks. The depth of the granule stain is much increased by diluting the benzidin reagent with a phosphate solution having a hydrogen-ion concentration of p_H 6.4 instead of with distilled water. Such a phosphate solution is prepared by adding 63 c.c. of fifteenth-normal (9.078 gm. to the liter) of monobasic potassium phosphate (Merck reagent) to 27 c.c. of fifteenth-normal (11.876 gm. to the liter) dibasic sodium phosphate (Merck reagent). The phosphate solution is also used for diluting the Wright stain. In using the phosphate solution it is necessary to place 2 drops of the benzidin reagent on the cover glass for thirty seconds, dilute with 16 drops of the phosphate solution, and allow the dilution to act for only one minute. Since the amount of reactive substance in the leukocytes of guinea-pig blood is much less than that present in human blood, 8 drops of the phosphate solution are used to dilute 4 drops of the benzidin, and a reaction time of four minutes is allowed in staining the blood of this animal. If the granules are colored too heavily, the structure of the neutrophils and eosinophils is obscured and the dilution with water (or phosphate solution) should be increased and the time shortened. The character of the polychrome stain is important, and a perfect stain must be used. In this laboratory, a sample of polychrome stain had so changed in two weeks at room temperature that it gave very imperfect results.

The granules of the neutrophils, endothelial leukocytes, and eosinophils stain dark brown, while all other blood elements are colored exactly as they are in a simple Wright's stain. The basophilic granules are a rich purple; the large eosinophilic granules are brown and have a ringlike appearance due to their refractive centers; the neutrophilic are dark brown, irregular in shape, and thickly set in the cytoplasm, while the robin's-egg blue of the lymphocytes is entirely non-granular except for the characteristic "azur" metachromatic granules of a bright reddish color present in some of them. With the uncombined Wright's stain, although the polychrome staining is perfect, there are no positive data regularly present by which to differentiate endothelial leukocytes from lymphocytes, on the one hand, and from those neutrophils that have more or less horseshoe-shaped nuclei, on the other. This disadvantage which attaches to the uncombined Wright's stain is due to the fact that the granulation may not be brought out at all in a certain number of the endothelial leukocytes, in which case they would be mistaken for lymphocytes; and at best the granules are very fine. In the differentiation the nucleus does not deserve the importance so commonly attached to it, since it is perfectly round in some endothelial leukocytes, while in a small number of lymphocytes it shows indentations. In contrast to the results obtained with Wright's and other polychrome stains, which are for these reasons unsatisfactory, the "oxydase" granulation makes identification of the endothelial leukocytes much easier; for in the cytoplasm of these cells there are always distinct discrete dark brown granules. There is no difficulty even with the simpler stains in the identification of the usual neutrophils, for in the endothelial leukocytes there is no filamentous connection of nuclear masses; but in the case of the younger neutrophils in which the nucleus has not become typically lobulated, uncertainties may arise. After application of the "oxydase" reaction, however, the granules in these immature neutrophils are so conspicuous that the separation of these younger neutrophils (metamyelocytes) and the endothelial leukocytes is rather easy. Immature neutrophils are seen to the best advantage in smears of blood from cases of chronic myelogenous leukemia, in which there are many metamyelocytes and in which the younger forms of the bone-marrow cells with their heavy granulations are well brought out.

The differential counting of guinea-pig leukocytes after Wright's staining is more difficult than it is in human blood, and some confusion appears in published classifications of the white cells of this animal. With the benzidin-polychrome stain the guinea-pig leukocytes are found to fall clearly into the same five classes as those of human blood. The brownish neutrophilic granulation is not heavy; and frequently in the endothelial leukocytes there are only three or four distinct brown granules, and these are likely to be grouped together in a focal area in the cytoplasm, especially at the point where the nucleus is indented. The blood of guinea-pigs with an artificially produced endothelial leukocytosis[3] shows these peculiarities much better than the blood of the normal animal in which there are few of these leukocytes.

It is necessary that the polychrome stain used be a good one; that is, the chromatin must be colored purple or reddish so that in the lymphocytes the nucleus appears in marked contrast to the blue cytoplasm. During a six months' period this laboratory obtained four samples of Wright's stain, of which two stained well and two gave no chromatin staining manifested by a reddening of the nucleus. After standing two weeks, one of the two faulty samples gave a rather poor polychrome effect. This is the usual experience

2. Graham, G. S.: J. M. Research **39**: 15 (Sept.) 1918.

3. McJunkin, F. A.: Experimental Endothelial Leukocytosis in Guinea-Pigs, Arch. Int. Med. **24**: 295 (Sept.) 1919.

in ordering Wright's, Hasting's, Wilson's, Leishman's and other polychrome stains from commercial sources. In order to have constantly at hand for use in the polychrome-benzidin stain a polychrome solution that is uniform in action, it is advisable to prepare a stock polychrome as described below from which the blood stain may be made as often as desired.

POLYCHROME BLOOD STAIN

I[4] have described a polychrome blood stain that gives constant results when fresh; but, like the earlier ones, it has been found to deteriorate in a few weeks. Since the publication of this method, the constituents giving the polychrome effect have been found to keep much longer and perhaps permanently in a concentrated glycerin solution, and the stain made in this way has been used in the benzidin-polychrome process, although any good Wright's or other polychrome stain is just as satisfactory. The method of preparing the polychrome blood stain is as follows:

One gm. of methylene blue (Grübler's B. X.), 50 c.c. of decinormal sodium carbonate, 25 c.c. of distilled water, and 25 c.c. of glycerin (Merck reagent) are placed in a 500 c.c. beaker, and heated on asbestos gauze over a low Bunsen flame for one hour at from 87 to 89 C., the ingredients meanwhile being constantly stirred with a mechanical stirrer at the rate of about 120 revolutions per minute. The heating and stirring must be carried out carefully to secure correct polychroming. A mechanical stirrer may be improvised by unscrewing the top from a small electric or water centrifuge, replacing it with a half-inch wooden wheel with a groove for carrying a cord belt, and running the stirrer, with a 2-inch wheel on its top, directly from this. Ten c.c. of distilled water are added at the end of ten, twenty, and thirty minute periods.

At the end of the hour, 5 c.c. of distilled water and 50 c.c. of glycerin (Merck reagent) are added, and the stirring and heating are continued for five minutes; and any dry dye is carefully rubbed from the sides of the beaker into the liquid. There are added 0.75 gm. of eosin (Grübler's yellowish, water soluble) and 0.75 gm. of methylene blue (Grübler's B. X.), and the heating and stirring continued at the same temperature for fifteen minutes. While hot it is poured into a 100 c.c. graduate and made up to exactly 100 c.c. with glycerin, any dye adhering to the sides of the beaker being taken up with the extra glycerin added. It is then poured into a 4-ounce bottle and shaken at intervals for fifteen minutes. Methylene blue and eosin obtained from the Will Corporation, Rochester, N. Y., have given results as satisfactory as those obtained with the Grübler dyes.

The dry dyes are weighed out on analytic balances, and the carbonate solution, which is made decinormal by titration against hydrochloric acid with methyl orange as an indicator, is run in from a buret. All glassware must be free from traces of acid.

From the stock solution prepared in this way, the blood stain is made by adding 3 c.c. with a bulb pipet to 25 c.c. of methyl alcohol (Merck reagent), the alcohol being drawn into the pipet several times to remove the concentrated glycerin solution. All solutions of polychrome stains, except a concentrated glycerin one, change on standing so that the blood stain must be made up from the glycerin stock solution every two or three weeks. In this way it is possible to prepare a polychrome blood stain that has a reaction accurately adjusted and one that can be readily made up in small amounts so as to prevent deterioration. The latter was not accomplished by the method previously reported. It is possible that the stock glycerin solution may deteriorate after several years, but there is no evidence of change after a six months' period.

To apply the stain to unfixed films, 4 drops of the solution are placed on a 22 mm. cover glass held in suitable forceps, or suitably supported on the top of a small test tube, for one-half minute to fix the preparation. Four drops of distilled water are added, and the stain so diluted is allowed to act for four minutes. It is then washed with distilled water until the film turns uniformly pink. Both stain and distilled water are dropped from bottles and not from a small capillary pipet. A phosphate solution with a hydrogen-ion concentration of p_H 6.4 may be used instead of distilled water for dilution.

Spirochetes and protozoa may be stained heavily by placing the preparations fixed in methyl alcohol for forty-five minutes in a bath made by adding 4 drops of the stock glycerin solution to each cubic centimeter of distilled water. The preparation is removed from the bath, and, after washing out the excess of blue, mounted in the usual way. Cover glasses are floated and slides supported with the preparation side down in such a way as to bring the part to be stained as near to the surface of the liquid as possible. The results obtained compare very favorably with those secured by the Giemsa technic.

4. McJunkin, F. A.: A Polychrome Stain with Advantages Over the Giemsa, J. A. M. A. **65**: 2164 (Dec. 18) 1915.

DEATH FOLLOWING SPINAL ANESTHESIA

WITH REPORT OF A CASE

JAY IRELAND, M.D.
CHICAGO

Lumbar or spinal anesthesia was first employed by Corning; it was rediscovered and improved by Bier. During the recent epidemic of influenza, there was a need for an anesthetic other than that which might irritate the respiratory passages.

REPORT OF CASE

History.—Mr. C., aged 68, Scotch, a plasterer, entered the ward for nervous patients of the Cook County Hospital, Jan. 15, 1919, complaining of pain in the right side of the chest, eczema of the hands and feet, varicose veins of the legs, and inguinal hernia. The pain in the right chest started, Jan. 10, 1919. It was sharp and stinging, and extended around to the front of the chest at the level of the costal margin. He had had phlebitis in 1901 and 1911, and gonorrhea in 1899, but he denied chancre. He had taken a few drinks of alcoholic liquor a day for the past few years, and had smoked moderately. The family history was negative.

Physical Examination.—The patient was well nourished, not acutely ill, and was mentally normal. The scalp, face, ears, tongue, teeth and pharynx were negative. The pupils were regular and reacted to light and accommodation. No nystagmus was present. The chest was emphysematous; the heart, negative; but the peripheral vessels were sclerosed. The liver was palpable at the costal margin. A large right inguinal hernia was present. Marked varicose veins of the legs were present. Eczema of the hands and feet was present. The reflexes were all normal and present except the abdominals, which were absent.

Clinical Course.—January 19, the pain in the chest, which was diagnosed intercostal neuralgia, disappeared. After lumbar puncture, 3 grains of apothesin were introduced into the spinal canal by the French method (after mixing with spinal fluid) by gravity with the patient in a recumbent position. He was placed in the sitting position, but became

cyanotic. Herniotomy was performed. Four hours later the systolic blood pressure was 98; the diastolic, 62. The pulse was 60 and was very weak. January 22, he was very incoherent and cyanotic, mumbled frequently, and had to be restrained. January 23, he was more stuporous, and involuntaries occurred; these continued till death. January 24, the right arm was flaccid; and the Babinski, Oppenheim, Gordon, and Chaddock signs were positive on the right. He moved his lips, but made no audible sound. Motor aphasia was present. January 28, the left parotid gland was swollen. January 29, right facial paralysis developed. February 1, slight increased fremitus with crepitant râles was present in the right lower lobe posteriorly. The temperature was 102 F., and respiration was 32. The right pupil was larger than the left; but the fundi were normal. The patient died about six hours after the lung findings began.

Necropsy.—This was performed by Dr. J. P. Simonds, February 3. Findings of sections of the brain, transversely, are:

Section 1 (through the genu of the corpus callosum and anterior tip of the lateral ventricles): There are a few subendymal petechial hemorrhages on both sides. On the left, the corona radiata is soft and grayish; there are petechial hemorrhages in the gray matter of the inferior frontal gyrus; the anterior portion of the island of Reil is dark and red. On the right side, the upper portion of the corona radiata is slightly softer than the adjacent tissues.

Section 2 (through the posterior portion of the septum pellucidum): On the left side, the caudate nucleus is normal. The internal and external capsules and the lenticular nucleus are soft and gray; the corpus callosum is normal in appearance. There is hemorrhage into the superior temporal gyrus; there is an area of hemorrhage into the white matter adjacent to the superior temporal gyrus 0.5 gm. in diameter. On the right side, there are no gross changes of importance.

Section 3 (through the thalamus): On the left side, the internal and external capsules, the lenticular and caudate nuclei, and the corona radiata are soft, and disintegrated, and gray; the superior temporal gyrus is hemorrhagic. On the right side, the superior portion of the internal capsule, the external capsule, and the lenticular nucleus are soft, disintegrated, and gray.

Section 4 (through the splenium of the corpus callosum): Almost all the white matter on both sides is soft, disintegrated, and gray, the condition being somewhat less marked on the right side. Almost all the cortex of the left temporal lobe is soft and dark.

Section 5 (1 cm. posterior to the pulvinar): On the left side, there is hemorrhage with softening about the calcarine fissure and over the posterior portion of the temporal lobe involving the entire thickness of the cortex. The right side shows no gross change.

COMMENT

This case does not present the ordinary findings of cerebral hemorrhage because of the numerous petechial hemorrhages. Houghton[1] states that the higher nerve centers are as a rule unaffected by a spinal anesthetic, and, speaking of stovain, that it seems highly probable with its use as a spinal anesthetic, that its specific action is limited almost exclusively to the locality into which it is injected in moderate doses. The experiments of Barker tend to show that a fluid injected into a tube, the shape of the spinal canal, does not remain in the place where it is injected. Hence some of the fluid injected in spinal anesthesia may travel toward the brain. Bier believes that epinephrin prevents the diffusion toward the brain. Just because a substance in a fluid is heavier than a fluid, it does not follow that this substance will remain where it is placed in the fluid, or at the base of the column of fluid as shown by Barker. Hence it does not follow that apothesin will remain in the caudal portion of the spinal canal. Houghton states that spinal fluid becomes milky in nature when stovain is added, and microscopically some particles of a milky nature are seen in it, which in a course of time run together into larger globules.

The low blood pressure following operation was in this case probably due to the cerebral hemorrhage. However, Yount,[2] and Porter and Smith[3] state that spinal anesthesia causes fall of blood pressure, and that the amount of fall of blood pressure appears to depend on the amount of drug injected. The manufacturers of apothesin, Parke, Davis & Co., claim that it is less toxic than any other local anesthetic. Eggleston and Hatcher[4] have shown that in cats, at least, procain is less toxic than apothesin. Bevan[5] reports using 13⅓ grains of apothesin at one operation.

Spielmeyer examined the central nervous system of thirteen patients dying after spinal anesthetics. The changes for the most part consisted of degeneration of the motor ganglion cells of the anterior horns, and were seen low down and high up in the cord. In some, the changes were so prominent that they would seem to be irreparable; but none of these changes were found in cases in which the dose did not exceed nine-tenths grain. His experiments with dogs gave the same results. Klost and Vogt's experiments gave the same results. They found chromolysis in some of the anterior motor cells. When physiologic sodium chlorid was used instead of anesthetic solution no changes were observed.

Thompson and Nagel[6] state that death is probably due to the action of the drug on the vasomotor fibers supplying the splanchnic area. The cause of death in the case herewith presented was due to cerebral hemorrhage. Whether this hemorrhage was due to toxic action of the apothesin on the cerebral vessels cannot be definitely stated. The fact that the blood pressure is lowered by spinal anesthetics would seem to indicate that it was not due to the usual cause of cerebral hemorrhage, i. e., high blood pressure with arteriosclerosis.

5412 North Clark Street.

1. Houghton, W. H.: Oxford Surgery, Ed. 1, New York, Oxford University Press **1**: 119, 1918.
2. Yount, C. C.: Isthmian Canal Zone, Med. A. Proc. **9**, Part 2: 51 (July) 1916.
3. Porter, William, and Smith, G. R.: American Year Book of Anesthetics and Analgesia, 1915, p. 399.
4. Eggleston, Cary, and Hatcher, R. A.: The Pharmacology of the Local Anesthetics, J. A. M. A. **73**: 1256 (Oct. 25) 1919.
5. Bevan, A. D.: S. Clinics, Chicago **1**: 37 (Feb.) 1917.
6. Thompson, G. F., and Nagel, J. S.: Illinois M. J. **36**: 62 (Aug.) 1919.

The Hospital in a Small Community.—As usual in a small community, the two general hospitals seem to be regarded as competitors. It might seem that the community has work enough for both hospitals to do but, of course, there is room for competition if each seeks to monopolize the profitable patronage of the well to do. What will be the outcome of such rivalry? Will each institution, like a hotel, bid for trade regardless of the actual needs of the community? Will costly equipment be duplicated and high salaried employees multiplied until the cost of good hospital service reaches a maximum limit in both institutions? Or will one hospital, by virtue of its wealth and reputation, attract patients who can pay for the standards of service it maintains, while the other lowers standards as much as it dares, making its bid for patronage on the score of cheapness? And, meanwhile, what will be the fate of that part of the community which makes no demand for hospital care, both because it cannot afford the price and because it has not learned the value?—M. K. Chapin, *Modern Hospital*, December, 1919.

THE MEDICAL RESERVE OFFICER IN THE WAR*

LOUIS J. HIRSCHMAN, M.D.
DETROIT

So much has been written about the medical reserve officer and his activities in the great war that anything more said may seem to be mere repetition and superfluous. What I shall say will not deal with the scientific aspect of his connection with the army or with the methods of treatment of wounds or diseases incident to military life. I wish to speak in a broad way of the medical reserve officer himself—what he did for the army and what the army did for him. Whatever may be said of a critical nature is brought out merely in the hope that in the reorganization of the Medical Reserve Corps, cognizance may be taken of the errors made in the past with the hope that these may be avoided in the future.

While it is true that services of tremendous value to the soldier were rendered by the medical reserve officer in the cantonments, training camps and hospitals situated in this country, it is not my intention to discuss this phase of the subject, first, because of my personal ignorance of their duties, since my service was overseas, and, secondly, because I wish to discuss only the medical reserve officer's work in the war zone.

In 1908, the original Medical Reserve Corps was organized. Its personnel was selected from among the leaders in the profession throughout the United States. This was done for the purpose of giving the Reserve Corps a high standing because of the high character and professional attainments of the individuals invited to become "charter members" of the corps. After a couple of years, interest was again revived in the Medical Reserve Corps, so that by 1911 a corps of approximately three times the size of the regular army medical corps was organized.

Under limitation by a law in force at that time, all medical officers were commissioned as first lieutenants. After a space of a few years, during which time the medical officers would occasionally receive pamphlets and booklets published by the army, a correspondence course was established, and Medical Reserve Corps officers were invited to take a short course in training camps established throughout the country. A few medical officers accordingly availed themselves of the opportunity to become acquainted with the mysteries of "squads right," "morning sick report" and "service records" and their importance as cogs in the army medical machine.

INEQUALITY OF RANK

When the new bill was made law, abolishing the old corps, making the Medical Reserve Corps a part of the Officers' Reserve Corps, the rank to which a medical officer might be commissioned was raised to that of major. For some strange reason, in every other division of the Officers' Reserve Corps, the maximum rank which a reserve officer could attain was that of colonel. This was an injustice which subsequent events proved to be a severe detriment to the fullest efficiency which officers of the Medical Corps of the highest professional standing in civil life were able to render in service.

It was very soon realized by officers in the Medical Reserve Corps in overseas service that a man's professional ability, experience or attainments were judged, not by his position in the profession in civil life but entirely by the insignia of rank which he wore on his shoulder. In the dealings with medical officers of allied armies and especially with line officers and those of other staff corps of our own, this was too often the rule; and, unfortunately, the American medical officer was often outranked by his professional brothers occupying a similar position with the allied armies.

Those medical reserve officers who responded at once to the nation's call after war was declared, and who accepted whatever commission was given them without question because of their patriotic desire to serve and who went overseas in the spring and summer of 1917, have good cause to remember the penalty imposed on them by the War Department. To be a pioneer proved to be a misdemeanor or crime, because medical reserve officers who blazed the medical trail in France and who had toiled for months in helping to work out our scheme for hospitalization and for the care of the sick and wounded were presently forgotten when promotions were handed out by the powers that be.

Several months after the medical work in France was fairly well organized by the early birds, who were mostly lieutenants and captains and a few majors sprinkled here and there, a crop of newly made majors arrived on the scene. These officers, for the most part, were younger in years and experience than many of the lieutenants and captains in overseas service, and were comfortably enjoying the emoluments and comforts of civil practice while their predecessors had gone overseas and prepared the way for them.

What was our astonishment to find that many of these officers had never heard of the original Medical Reserve Corps. These officers either received their majorities direct from civil life or, after spending from sixty to ninety days in training camps, were rapidly promoted to majors and sent overseas to outrank in many cases their teachers and hospital heads at home.

It was interesting to note that at the early meetings of medical officers in Paris under the auspices of the American Red Cross, there was an absence of service stripes on the sleeves of young officers whose shoulders shone with brand new brightly polished golden oak leaves; while beneath those single and double silver bars of their more mature companions sprouted a goodly number of gold service stripes on the left sleeve and, here and there, a wound stripe on the other.

The first assistant to the chief surgeon of the American Expeditionary Forces, none other than our present Surgeon-General, soon recognized the inequality of rank among his medical reserve officers, and earnestly endeavored to rectify this inequality by recommendations for promotions made toward the end of 1917. For some as yet unexplained reason, the general staff frowned down on any promotions in the Medical Reserve Corps, while they raised the regular army medical officers at least one grade.

In the meantime, promotions up to the grade of brigadier-general were being made in other reserve corps of the army, and the officers so promoted, a few months previously, in civil life, had never heard of the corps in which they were now occupying responsible positions. At the same time, the medical profession

* Read before the Mississippi Valley Medical Association, Louisville, Ky., Oct. 21, 1919.

was furnishing the only reserve officers who had technical training in the department in which they were to serve.

I know of one instance in which the president of a large bank whose only interest in railroad engineering was the possession of large blocks of railroad securities was commissioned as lieutenant-colonel in the engineering corps and rapidly promoted to colonel, later becoming brigadier-general. In the meantime, surgeons whose names were household words in America were serving as captains, in a few cases as majors.

ATTEMPTS AT CORRECTION

It was not until the spring of 1918, nearly a year after some of the reserve officers had begun their service in France that, through the loophole of the National Army, some majors became lieutenant-colonels. The lieutenants and captains, however, without regard to their professional attainments, were still outranked by their interns, assistants and students fresh from home. In spite of all this, let it be said for the medical reserve officers that they kept on doing their duty and attending the sick and wounded, always cherishing the hope that some day conditions would be remedied. The result was that in many hospitals and even in line organizations, lieutenants and captains whose professional and military worth was early recognized were holding responsible administrative positions which, according to the tables of organizations, should have been occupied by officers of field rank. In some of our base hospitals, a captain, and in at least one case a lieutenant, was director in charge of the surgical division; and in one of our famous National Guard divisions, the ranking regimental medical officer for several months, and at the front, was a first lieutenant!

In the spring of 1918, in all other departments of the army, promotions began to appear. The Medical Department, realizing that the position of the pioneer medical reserve officer was unjust and humiliating, endeavored to find some way to remedy the existing conditions. After much thought and many conferences, a wonderful scheme which secured the approval of the general staff was decided on. This was the scheme to promote medical officers, not by the value of their services or of their professional qualifications or of their length of active service, but first and foremost by their age. It was decreed that no matter how valuable a first lieutenant's services might be, if he was unfortunate enough to have been born at so recent a date that he was not 35 years of age, he could not be promoted to a captaincy. Until he had reached the dignity of 40 years of age, no matter how valuable and efficient an officer in the Medical Corps he was, a majority was denied him.

The chief surgeon's office, in an endeavor to get the approval of the general staff on these so-called "corrective" promotions, secured the following concession: For every three months of active service the officer was to receive a year's credit in computing his age for the purposes of promotion. In other words, a lieutenant 33 years of age, who had served six months, would be considered 35 years old for the purpose of promotion to a captaincy. When the first large batch of recommendations for promotions was sent to Washington in July, 1918, however, the actual age was the basis, and not the actual age plus the credit for active service. The names of the officers who did not attain the actual age required were put on a roster for future promotion which was to include the added credit for actual service. Officers showing exceptional ability or meritorious service were supposed to be exceptions to the general rule. If such exceptional promotions did occur, the majority of medical reserve officers in France and England never heard of them.

UNFORTUNATE RESULTS

Why the reserve medical officer, professionally equipped for his work, was held down arbitrarily by an age limit, while in every other branch of the service the age limit was unheard of, is one of the mysteries of the war on which the medical reserve officer would be pleased to be enlightened.

Many faithful and efficient men were so disappointed by this ruling that their morale was severely affected, and, in spite of themselves, they were not giving their best efforts to their work. The conditions were so intolerable that apologetic and explanatory official circulars were published; in the meantime, however, promotions, except for a few which came through strictly on the age propositions, were slow to come to the medical reserve officer.

It was of the utmost importance that medical officers of high standing in the profession should insure the enforcement of their recommendations. Think of the humiliating position of a leading surgeon of one of our great cities, ranking as a captain, endeavoring to have certain important regulations enforced in a regiment whose colonel in civil life was a merchant who "hadn't much use for doctors."

When rank was needed the most by reserve medical officers, it was denied them by the general staff. Months after the armistice was signed and their relations with medical officers of allied armies and with other officers of our own were on an entirely different plane, then apparently as an act of eleventh-hour repentance, promotions were passed out freely. After the activity of war was over and medical officers were getting impatient awaiting their turns to go home, these belated promotions were not accepted in the spirit which they would have been had they come when higher rank was most needed. On account of the fact that the average practitioner of medicine is not a good business man, many left their families in meager circumstances. When one considers that a practitioner leaving his practice makes a greater sacrifice than the business man who leaves a "going concern" for his assistants to run, the financial part assumes great importance. The difference in salary and commutation between lieutenants' or captains' and field officers' rank meant often the difference between comparative want and comfort for the dear ones at home.

It would be interesting to see the proportion of medical reserve officers who saw overseas service who are now members of the Medical Reserve Corps, as compared with those who refused commissions in the corps. I have listened to conversations between discharged medical officers time and time again, and have found that the feeling of the great majority was that they had been unjustly treated, and that unless the situation was greatly improved, they would hesitate a long time before rushing into service again.

I believe that the "powers that be" at Washington are now commencing to realize that the medical reserve officer was not treated fairly, and I feel that with the

full knowledge of the valuable services rendered by the corps, the reorganization of the Medical Reserve Corps will give the medical officer at least an equal standing with the reserve officer of any other corps of the army.

Our regular army medical corps was, of course, pitifully small at the beginning of the war. Let me say this to the credit of those few men: They had to be spread out very thin in order to form any sort of a backbone to the organization. This meant, of course, that they were all required for headquarters and administrative work and to instruct reserve corps officers. It therefore necessarily followed that all of the professional work, with a very few exceptions early in the war, was done by the reserve corps officers.

The medical reserve officer showed such a marked aptitude for his work that very soon many important administrative positions were likewise filled by reserve officers. The glowing reports of Surgeon-General Ireland testify to the wonderful work done by the medical reserve officers.

From personal observation of the service rendered in front line positions by the reserve officers, I wish to say that patients came back to the field hospitals, in the main, in most excellent condition. The exceptions to this rule were so few that they need practically not be mentioned. In evacuation and base hospital work, medical and surgical teams were composed of men who were leaders at home, and sick and wounded soldiers received a type of professional care that has been seldom surpassed in our leading city hospitals. The casualties among medical reserve officers were high, as were also the citations and awards for individual bravery

Let it be said to the credit of our profession that, though smarting under the lack of recognition of their work and deserved promotion, they "delivered the goods" in a way that will always remain a tradition to be looked up to by the coming generation. The fact, however, that of 35,000 medical officers in service, a little over 10 per cent. have accepted commissions in the present reserve corps indicates that much missionary work must be done by the officers in charge.

SUGGESTIONS FOR THE BUILDING UP OF AN EFFECTIVE MEDICAL RESERVE CORPS

It is hoped that this subject will be discussed by the members of this association, and that in the discussion will be brought out suggestions which will prove of value to the Surgeon-General's Office in the building up of a reserve corps of excellent personnel and of goodly numbers. Might I make the following suggestions:

1. In order to secure an efficient corps, we have now a wealth of material from which to select its personnel. Approximately 35,000 physicians have seen active service, and a goodly proportion overseas service in the theater of operations. It is proposed, therefore, that all commissions in the Medical Reserve Corps for the next five years be limited to men who have been in active service.

2. Since the Surgeon-General's Office is in possession of data as to the fitness, capability, medicomilitary experience and military adaptability of every medical officer, this information will be of the greatest value in securing the highest type of material for medical officers.

3. Since it is now well recognized that inequality and injustice were frequent in the grading of Medical Reserve Corps officers, particularly in overseas service, it is suggested that all officers be recommissioned in the reorganized corps. Many officers deserve, by the character of their work and the postitions they filled, much higher grading than that with which they were discharged. Others were graded notoriously too high for the service they rendered.

4. It is recommended that all applicants for positions who have not seen military service be commissioned as first lieutenants. Since there are so many thousands of officers whose military experience and adaptability are on record, it is obviously unfair to these that a man from civil life should receive higher military commission than one who has shown his worth in active service. Every man in the profession, no matter how prominent he may be professionally or medicopolitically, had his opportunity to do his bit during the war. If he did not, he should take his place at the end of the line if he wants to join the corps at this late date. If all officers start as first lieutenants, they can be promoted as soon as they show that they are qualified to perform the duties of higher grade.

5. In securing professional information and data regarding the qualifications of civilians for commissions in the Medical Reserve Corps, it is hoped that such information will be secured from official rather than personal or political sources. It naturally follows that prospective medical reserve officers should be affiliated with their county medical society, the American Medical Association, hospitals, colleges or universities. From sources such as these, authentic information as to their professional qualifications, personal character and general suitability for the service can be gathered. It is assumed that a hospital in which a man practices his profession will be in a better position to report on his professional ability than will the congressman from his district.

6. As the soldiers of today were the civilians of yesterday, they are subject to the same illnesses and injuries as those of a purely military character. It therefore follows that all the specialties of medicine in civil life should be represented in like proportion in the army. If this had been done in the mobilization camps and recruiting stations, a more thorough system of preliminary examinations would have kept out those soldiers who later on required hospitalization overseas to the exclusion of battle casualties.

7. As different grades in the Medical Reserve Corps are in the same proportion as those in the regular army corps, it is recommended that all of those officers who held commissions who were not called to active duty be honorably discharged. It is well known that while many of these officers were prominent professionally, they were incapacitated for service either by age or unsuitability, and are holding commissions when they cannot possibly serve on active duty. These commissions, if vacated by honorable discharge, would assist in providing higher grades in the Reserve Corps for officers who have refused commissions because they felt they had not been fairly treated.

Let us hope that the Surgeon-General's Office, under its present able leadership, will take cognizance of the unfortunate error of our previous unpreparedness and will build up a Reserve Corps for future emergency which will have as its watchword "efficiency first."

Kresge Medical Building.

HEAT-RESISTANT ORGANISMS

A STUDY OF BACTERIA ENCOUNTERED IN HEAT STERILIZATION OF SURGICAL LIGATURES AND SUTURES *

FREDERIC FENGER
ELOISE B. CRAM
AND
PAUL RUDNICK
CHICAGO

We are dealing in this paper only with resistant organisms, which normally occur in commercial, unsterilized ligatures, as they are able to survive the drastic cleaning, bleaching and drying processes through which the raw sheep gut must pass before it becomes a finished ligature or suture.

In the course of the experimentation to determine the temperature necessary to insure sterility of the product, more than a hundred cultures were obtained, both from the raw, unsterilized ligatures and from those heated at various temperatures. These cultures were examined, and from them fourteen typical specimens were selected which included all the varieties observed. From these fourteen cultures five distinct types of bacteria were isolated: three spore-forming bacilli and two cocci. All were aerobic and facultatively anaerobic and grew at both 20 and 37 C., though somewhat more quickly at the latter temperature.

A careful search of the literature failed to disclose any descriptions that would apply to the cocci. The color of their growth on agar, however, indicated that they were saprophytic forms, and this was borne out by the fact that they were nonpathogenic for mice, guinea-pigs and rabbits, the animals showing no bad effects whatever from the injections. It is interesting, also to note the great resistance of these nonspore-forming organisms to extremely high temperatures when the conditions are such as found in the ligatures.

CULTURAL REACTIONS

1. Coccus giving yellow growth on agar:

Morphology.—A gram-positive coccus (from 1.2 to 1.75 microns in diameter) arranged in irregular clusters.

Cultural Reactions.—Agar Slant: A deep yellow, lustrous growth, nonspreading.

Gelatin Colonies: Small, lemon-yellow; under microscope edge entire; finely granular. No liquefaction.

Gelatin Stab: Slight growth on surface; no liquefaction.

Peptone Broth: Heavy turbidity and later a dense sediment.

Sugars: Slight acid production in glucose and saccharose; no gas production.

Pathogenicity.—Negative for rabbits, guinea-pigs and mice.

2. Coccus giving a rose pink growth on agar:

Morphology.—Fairly small gram-negative cocci (from 0.7 to 0.9 micron in diameter) arranged in grapelike clusters resembling staphylococci.

Cultural Reactions.—Agar Slant: Slight rose pink lustrous growth along streak.

Gelatin Colonies: Minute lustrous deep pink colonies. Under microscope, circular shape, highly refractive, brown color. No liquefaction.

Gelatin Stab: No liquefaction; slight growth at puncture.

Peptone Broth: An even turbidity, later giving a fairly heavy powdery, orange pink sediment.

Sugars: No gas, no acid production.

Potato: A few minute pink colonies.

Milk: No visible change.

Pathogenicity.—Negative for rabbits, guinea-pigs and mice.

Two of the bacilli were classified according to Lawrence and Ford.[1]

3. *B. vulgatus:*

Morphology.—Gram-positive bacilli of medium size (from 1.75 to 3.5 microns by 0.9 micron); ends rather square; spores in center very slightly bulging the sides. Many shadow forms; rotatory motility.

Cultural Reactions.—Agar Slant: Heavy, spreading growth, deep cream color, nonlustrous; wrinkled at bottom and at top; edge uneven. Small round colonies apart from the main growth.

Gelatin Colonies: Small, waxy, cream white colonies; under microscope, highly refractive; edge entire. Rapid liquefaction.

Gelatin Stab: Crateriform liquefaction; scum production.

Peptone Broth: Heavy turbidity, dry, wrinkled white scum. Later an almost complete clearing of the broth.

Sugars: No gas, but acid production in glucose and saccharose.

Potato: Heavy, pink-white, dry, very wrinkled growth.

Milk: No acid production or coagulation; pronounced peptonization.

Pathogenicity.—Negative for rabbits, guinea-pigs and mice.

4. *B. simplex:*

Morphology.—Gram-positive slender rods (from 3.5 by 0.58 to 0.87 micron) growing out in long filaments (from 14 to 17.5 microns), especially in glucose broth. The spores occur in the short rods and do not swell the sides. Very actively motile.

Cultural Reactions.—Agar Slant: Thin, transparent, cream colored growth.

Gelatin Colonies: Thin, white colonies, lustrous; edge entire.

Gelatin Stab: Cup shape liquefaction; no visible growth.

Peptone Broth: Even, faint turbidity.

Sugars: No gas, no acid production.

Potato: Heavy, moist, cream yellow, spreading growth.

Milk: No coagulation; pronounced peptonization.

Pathogenicity.—Negative for guinea-pigs.

5. Bacillus: This bacillus did not conform to any of the aerobic, spore-bearing, nonpathogenic bacteria classified by Lawrence and Ford, but its morphologic and cultural characteristics closely resemble those of *B. lacteus* as described by Chester.[2]

Morphology.—Gram-positive bacillus (3.5 microns by 0.9 micron in size), ocurring in chains; spores developing at end, swelling the sides. Motility negative.

Cultural Reactions.—Agar Slant: Medium heavy, gray white, nonlustrous, moist growth; edge undulate; wrinkled at bottom.

Gelatin Colonies: No visible colonies in from two to ten days; no liquefaction.

Gelatin Stab: Slight liquefaction over entire surface.

Peptone Broth: Tenacious scum, smooth surface; when shaken, scum gives off heavy flocculi into broth.

Sugars: Acid production in glucose. No gas.

Potato: Fairly heavy, moist, nonlustrous, cream colored growth; uneven edge.

Milk: Decolorized; coagulation and peptonization.

Pathogenicity.—Negative for rabbits, guinea-pigs and mice.

A twenty-four hour broth culture showing heavy growth was used for the animal injections; 0.2 c.c. injected intravenously in rabbits, 0.5 c.c. intramuscularly in guinea-pigs and 0.3 c.c. subcutaneously in mice.

*From the Research Laboratories of Armour and Company.

1. Lawrence, J. S., and Ford, W. W.: J. Bacteriol. 1:273 (May) 1916.

2. Chester, F. D.: Manual of Determinative Bacteriology, New York, the Macmillan Company, 1909, p. 291.

Before surgical ligatures can be sterilized, it is necessary to remove all moisture from them in order to prevent hydrolysis. If this is not done, the application of heat readily converts the collagen of the ligatures into gelatin, thereby destroying or at least seriously injuring their tensile strength. Sterility must, consequently, be produced by dry sterilization. Fractional sterilization is of no avail, since the spores are unable to develop in the absence of water. Mercuric iodid and other radical germicides, even in solution, have little or no germicidal value in the absence of water. The tanning and chromacizing processes do not in the least inconvenience the resistant organisms found in ligatures, nor does vacuum drying for six hours at from 90 to 95 C. Chloroform does not destroy these organisms and spores, even after heating in sealed tubes at 125 C. for one and one-half hours. They are also indifferent to petroleum benzin, kerosene, carbon tetrachlorid, toluene, xylene and similar liquids at the above mentioned temperature.

The only effective means of producing sterility in plain and chronic ligatures is by the application of heat. This may be accomplished by heating the ligatures in oil or some other suitable, nonaqueous liquid to the desired temperature, as originally suggested by Bartlett.[3] This temperature must be sufficiently high to destroy all living protoplasm, and it must at the same time be below the decomposition temperature of the ligature proteins in order to avoid destruction of the ligatures. Practical experience has demonstrated that such a margin exists, although its limits are rather narrow.

Absolute sterility is assured by heating the ligatures gradually up to 160 C. and maintaining this temperature for one hour. This confirms Bartlett's findings.[3] Numerous tests have demonstrated that heating at 150 C. for one hour or at 140 C. for three hours does not always produce sterility. This applies to the cocci as well as to the spore formers described in this paper. These temperatures weaken or stunt the organisms and spores to such an extent that growths do not appear until the fourth, fifth or even sixth day of incubation, a point of considerable importance in the control examination of ligatures.

The thermometers employed were certified by the U. S. Bureau of Standards.

CONCLUSIONS

1. Of five distinct types of heat-resisting bacteria described, including both cocci and bacilli, which commonly occur in raw ligatures and sutures, none were found to be pathogenic.

2. Plain and chromicized ligatures and sutures can be sterilized only by heat. Antiseptics and germicides are of no value in the absence of water.

3. The thermal death point for the five types of bacteria lies between 150 and 160 C. under the conditions found in ligatures and in nonaqueous liquids.

4. Absolute sterility is assured by gradually heating the ligatures in oil or some other suitable nonaqueous liquid up to 160 C. and maintaining this temperature for one hour.

5. The great resistance to heat of the two types of cocci described is a very important fact.

3. Bartlett, Willard, cited by Beckman, E. H.: Operating-Room Technic, Collected Papers by the Staff of St. Mary's Hospital, Mayo Clinic, 1905-1909, Philadelphia, W. B. Saunders Company, 1911, p. 586.

ACUTE METHYL ALCOHOL POISONING ASSOCIATED WITH ACIDOSIS

REPORT OF CASE*

GEORGE A. HARROP, JR., M.D.
AND
E. M. BENEDICT
BALTIMORE

Ever since its introduction into commerce, methyl alcohol has been the prolific cause of a severe and frequently fatal type of poisoning. The recent increase in the number of cases reported, due to various preparations which have this alcohol as their basis and which have resulted in blindness or death, has indicated the possibility that the condition will assume still greater importance with the more rigid enforcement of the national prohibition amendment. It seems desirable to report the following case, together with the collected data, because it appears to offer a suggestion as to therapy, hitherto disregarded.

A brief summary of the clinical history follows:

REPORT OF CASE

History.—C. B. (Medical No. 137328), woman, aged 25, white, actress, admitted, Nov. 24, 1919, discharged, December 23, with irrelevant previous history, on the night of November 22 drank about half a pint of a fluid supposed to be brandy. Subsequent examination by a chemist of the small amount available for analysis indicated that 87 per cent. of the alcohol content was methyl alcohol.

The following afternoon (November 23), the patient felt weak and nauseated. On the morning of the 24th she vomited, and began to notice dimness of vision, which rapidly increased. She had pain in her back, headache, marked thirst, and considerable difficulty in breathing. Late in the afternoon she was seen by a physician, who had her removed to the hospital.

Physical Examination.—On admission the patient was drowsy and cyanotic, her breathing was deep and rapid, she was restless, and she complained that everything looked black in front of her. The temperature was subnormal. The pupils were dilated, but reacted to light. No particular odor was noted on the breath. Gastric lavage was done, and alkali was given by mouth, but it was not retained. The air hunger rapidly grew more marked, and about midnight the bicarbonate content of the blood plasma (Van Slyke) was equivalent to 36.4 per cent. by volume of carbon dioxid. The patient was then given 400 c.c. of 5 per cent. sodium bicarbonate solution intravenously.

November 25, her vision was practically gone. She was still nauseated, and although the hyperpnea was much less marked, the determination of the plasma bicarbonate still indicated a marked acidosis, and a second intravenous injection was given of 500 c.c. of 5 per cent. sodium bicarbonate. Thereafter there was no evidence of acidosis as indicated by the plasma bicarbonate. The clinical examination of the blood, spinal fluid and urine revealed nothing of diagnostic significance.

During the following two or three days she exhibited a rather marked delirium with visual hallucinations. Thereafter she was quite normal mentally. The vision improved gradually, but a well-defined central scotoma remained on the left side, and there was evidence on opthalmoscopic examination of a mild postneuritic atrophy on the left.

The accompanying table shows the chemical studies made. There was at no time a disturbance of the phenolsulphonephthalein excretion or of the normal blood urea concentration. The acetone bodies were determined by the method of Van Slyke.[1] The titrable organic acids in the urine were

* From the Medical Clinic of the Johns Hopkins University and Hospital.

1. Van Slyke: J. Biol. Chem. **30**: 347, 1917.

estimated by the method of Palmer and Van Slyke.[2] The formic acid in the urine was determined by the method of Dakin, Janney and Wakeman.[3] The lactic acid in the urine was estimated by a modification of the Ryffel[4] method. It was impossible to obtain accurate total collection of the urine during the first days on account of the patient's condition, so that the total excretion of the several factors studied could not be determined. The creatin and creatinin determinations were done by Folin's method, while the inorganic phosphates of the blood serum were estimated by Marriott's method.

As is indicated, the patient was admitted with an acidosis of a severe grade, which promptly disappeared following the intravenous use of sodium bicarbonate.

COMMENT

It was pointed out long ago that, whereas ethyl alcohol is completely oxidized with ease by the animal metabolism, such is not the case with methyl alcohol; and Pohl[5] in 1893 showed that formic acid, a normal constituent of the urine, is excreted in greatly increased quantities following the administration of this alcohol to dogs by mouth. He found that the formic acid was excreted very slowly, and that the maximum amount of formates was not present in the urine until the third or fourth day. The total amount so excreted by no means accounted for the entire dose given, and the maximum recovered after the feeding of sodium formate itself, which is quickly excreted, was but 18 per cent.

One experiment was made on a man who drank 25 c.c. of methyl alcohol, which caused similarly a marked rise in the formate excretion.

The fate of the remaining portion of the alcohol is not known. A considerable quantity can be recovered, according to Asser,[6] in the expired air. Thus, he was able to recover, over a period of seven days following its administration, 55.8 per cent. of 25 c.c. of methyl alcohol given by mouth to a dog, while in the urine following such a dose he recovered only from 3.1 to 4.6 gm. of formates. This author has made the further interesting observation that when ethyl or amyl alcohol, or acetone, is given together with the methyl alcohol, the excretion of the formates is very appreciably diminished over the amount recoverable when methyl alcohol is given alone. As to the excretion of methyl alcohol itself in the urine, there is some disagreement. Pohl did not recover it but, on the other hand, Bongers[7] asserts that considerable quantities are thus disposed of.

Acting on a suggestion of Schmiedeberg's,[8] that an acidosis might be produced in cases of methyl alcohol poisoning, on account of the formation of formic acid, Król[9] was able to show a well-defined increase in the ammonia of the urine associated with the increased formic acid excretion in dogs. The formic acid excreted, however, accounted for only about one quarter of the ammonia. Król did not attempt to determine what acid might account for the major part of the ammonia, except that he states that it was not oxalic acid.

On the basis of somewhat crude methods, Tyson and Schoenberg[10] concluded that they could produce an acidosis in rabbits following the inhalation of methyl alcohol. They considered methyl alcohol to be a "true hemotoxic," and their plan of treatment, "based on the findings, might be summed up in two words: eliminate and stimulate." Authors have generally ignored the specific indications for the treatment of the acidosis as such.

The description of the clinical findings in the large group poisoned at Christmas, 1911, in Berlin states that in the most severe cases the patients had marked cyanosis and severe air hunger.[11] Many references can be found, in clinical reports, of respiratory distress and of forced breathing, in the severer cases, which may well have been the hyperpnea of acidosis.

The marked increase in the lactic acid excretion, together with the rise in the urinary creatin (which was far greater than could be accounted for simply by starvation), makes it evident that we are dealing with a more profound disturbance of the metabolism than is indicated by the simple failure of the body properly to oxidize the methyl alcohol. It would appear, however, that when an acidosis is demonstrated by the proper laboratory tests,[12] the employment of the usual therapy, particularly the administration of sodium bicarbonate, is urgently indicated. We feel convinced that a definite therapeutic aid was in all likelihood obtained by its use here. Certainly, so far as the formic acid is concerned, the excretion is limited by the amount of the

CHEMICAL DETERMINATIONS

Date 1919 (11:30 p. m.)	Blood Plasma Carbon Dioxid Per Cent. by Volume	Blood Urea, Gm. per Liter	Acetone Bodies (Urine), Gm. per Liter	Acetone Bodies (Blood), Gm. per Liter	Lactic Acid (Urine), Gm. per Liter	Formic Acid (Urine), Gm. per Liter	Titrable Organic Acids (Urine), C.c. N/10 Acid per Liter	Creatin (Urine), Gm. per Liter	Creatinin (Urine), Gm. per Liter	Inorganic Blood Serum Phosphates, Mg. per 100 C.c.
Nov. 24	36.4	.....	....	....	1.55	1.26	2,200	0.202	0.558	....
Nov. 25	36.0	0.175	2.79	0	0.75	....	2,258	0.283	1.000	3.0
Nov. 26	86.2	.....	0.83	....	0.26	0.60	1,560	0.535	0.800	....
Nov. 27	....	.....	....	....	....	....	710	.....	.....	....
Nov. 28	....	.....	0	....	....	....	220	.....	.....	....
Nov. 29	76.7	0.091	....	....	....	....	406	0.300	0.590	....
Nov. 30	....	.....	....	....	....	....	420	.....	.....	....
Dec. 1	....	.....	....	....	....	....	256	0.180	0.538	....
Dec. 2	....	.....	....	....	....	....	270	0.137	0.557	....
Dec. 3	....	.....	....	....	0.08	0.07	364	.....	.....	....
Dec. 11	....	.....	....	....	....	....	199	0.105	0.378	....
Dec. 17	....	.....	....	....	....	....	260	0.024	0.476	....
Dec. 20	62.1	0.165	....	....	....	....	.....	.....	.....	....

2. Palmer and Van Slyke: Proc. Soc. Exper. Biol. & Med. **16**: 80, 1919.
3. Dakin, Janney and Wakeman: J. Biol. Chem. **14**: 341, 1913.
4. Ryffel: J. Physiol. **39**: 9, 1909.
5. Pohl: Arch. f. exper. Path. u. Pharmakol. **31**: 281, 1893.
6. Asser: Ztschr. f. exper. Path. u. Therap. **15**: 322, 1914.
7. Bongers: Arch. f. exper. Path. u. Pharmakol. **35**: 429, 1895.
8. Schmiedeberg: Therap. Monatsh. **26**: 329, 1912.
9. Król: Arch. f. exper. Path. u. Pharmakol. **72**: 444, 1913.
10. Tyson, H. H., and Schoenberg, M. J.: Experimental Researches in Methyl Alcohol Inhalation, J. A. M. A. **63**: 915 (Sept. 12) 1914.
11. Berl. klin. Wchnschr. **49**: 193, 1912.
12. Possibly it is not necessary to state that the presence or absence of a ferric chlorid reaction in the urine is of no significance in types of acidosis other than acetone body acidosis. The ferric chlorid reaction in the urine in only one specimen was markedly positive in this case.

alcohol ingested, and more is to be expected as a result of its prompt neutralization than in other types of acidosis, in which the formation of acid metabolites may continue quite independently of our ability to neutralize them.

Of practical importance is the observation of Bongers,[7] who gave methyl alcohol to dogs by mouth, and then estimated the amounts recoverable by gastric lavage repeated over several days. He asserts that he recovered about three times as much methyl alcohol in the combined washings of the second and third days as he was able to obtain in those of the first. He was also able to recover formic acid in the stomach washings twenty-seven hours after the alcohol was given. This work would appear to point out clearly the importance of thorough and repeated lavage.

SUMMARY

1. In case of severe acute poisoning with methyl alcohol, associated with a marked grade of acidosis, recovery followed the use of alkali therapy.

2. The acidosis was associated with an increase in the amount of titrable organic acids in the urine, and specifically with a marked increase in the excretion of lactic and of formic acids.

3. The acidosis, when present, furnishes an indication for the use of prompt therapeutic measures.

4. On the basis of the work quoted, it is submitted that gastric lavage should probably be done over a period of several days.

CULTURAL STUDIES ON A CASE OF SPRUE

PRELIMINARY NOTE *

WADE W. OLIVER, M.D.

BROOKLYN

The purpose of this preliminary communication is to record briefly certain laboratory findings in a case of sprue.

REPORT OF CASE

Charles W., an American, resident in Porto Rico, invalided north, was admitted to the Long Island College Hospital, where stool cultures were made. Following this, tongue cultures, sputum cultures and a culture from a tooth abscess were taken, as well as a blood culture. On two occasions from the stool, twice from tongue scrapings, once from the sputum and once from the tooth abscess, a growth of yeasts was obtained which corresponded in the main to *Monilia psilosis*, described by Ashford[1] as the cause of sprue.

Isolation of Organism.—In the case of the stool, cultures were obtained by emulsifying a standard loopful of stool in from 1 to 2 c.c. of sterile physiologic sodium chlorid solution and streaking from 1 to 2 loopfuls of the suspension across large (135 mm.) + 1 glucose agar plates which had previously been allowed to harden. Cultures from the tongue were taken in one case by scraping the inflamed tongue with a sterile knife, after preliminary swabbing of the tongue with sterile water, and in the other instance by thoroughly swabbing the tongue with a sterile cotton swab. In both instances, *Monilia* was isolated when a large + 1 glucose agar plate was streaked, and the culture incubated at 37.5 C. (99.5 F.). A positive culture was obtained from the tooth abscess by inserting into the latter a small sterile pledget of cotton mounted on a sterile stick and immediately streaking several large plates of + 1 glucose agar. From the sputum, which was lightly streaked with blood, cultures were secured by thoroughly washing a small fragment of bloody sputum in several tubes of sterile physiologic sodium chlorid solution and then streaking the fragment over three large 1 per cent. glucose agar plates (+ 1). The plates were incubated at 37 C. (98.6 F.). A blood culture was negative, and after two weeks' continuous incubation at body temperature, the + 1 glucose blood agar plates and the + 1 glucose blood broth were discarded.

Morphology.—The yeast exhibited quite a striking variation in size and form, which seemed somewhat independent of the medium, as a mount made from a single colony showed a polymorphism among its members. The single cells were round or oval, varying in diameter from about 2 to 7 microns, were sharply defined in outline, and possessed a nucleus which was recognizable in fresh preparations. Many cells showed an oval or spherical, faintly outlined vacuole. Mycelial elements were occasionally observed in + 1 glucose agar but best apparently in gelatin.

On + 1 glucose agar plates incubated at 37 C. for two days, the colonies of *Monilia* were white, glistening, elevated, and soft, with clearly defined borders. In cultures, a rather "yeasty" odor was observed. In + 1 infusion broth, at the end of twenty-four hours at 37 C., the broth was evenly clouded. Broth cultures incubated for three or four days or longer usually exhibited a sedimented growth at the bottom and a white growth ring at the surface of the medium where it was in contact with the glass.

In gelatin stab cultures, the growth resembled that of an inverted pine tree. Smears made from the growth in gelatin showed considerable numbers of mycelial elements, which varied in size and usually were somewhat wavy in outline.

Fermentation Tests.—Fermentation tests were made by the Durham tube-within-a-tube method. The medium employed was peptone water in which the respective sugars were present in a concentration of 1 per cent. The Andrade indicator was used to determine acid production. Readings were made daily, and the tubes were incubated for at least two weeks at 37 C. before they were discarded. The material used for inoculation was taken from twenty-four hour + 1 glucose agar slants. Between thirty-six and forty-eight hours' incubation was found to give the optimum acid and gas readings. In the tests herewith recorded, sugars that were not fermented within this time failed to be fermented on longer incubation, nor did transplants made from such sugars to respective sugar broths incubated at 37 C. for two weeks result in fermentation. From the table of fermentation tests, it is to be noted that the stool and tongue strains agree in their acid producing power, but that the tongue strain produces both acid and gas in saccharose, whereas the stool strain splits off acid alone from this disaccharid.

RESULTS OF FERMENTATION TESTS

Medium	Monilia from Stool	Monilia from Tongue Scrapings
Glucose	Acid +; gas @ 90%	Acid +; gas 100%
Levulose	Acid +; no gas	Acid; no gas
Galactose	Acid; no gas	Acid; no gas
Saccharose	Acid (faint); no gas	Acid +; gas @ 80%
Maltose	Acid; no gas	Acid; no gas
Lactose	No acid; no gas	No acid; no gas
Mannite	No acid; no gas	No acid; no gas
Dextrin	Acid (very faint); no gas	Acid (faint); no gas
Xylose	No acid; no gas	No acid; no gas
Inulin	No acid; no gas	No acid; no gas
Glycerin	No acid; no gas	No acid; no gas

Animal Inoculations.—Two standard platinum loopfuls of a twenty-four hour + 1 glucose agar slant culture suspended in 0.5 c.c. of sterile physiologic sodium chlorid solution were injected intraperitoneally into a guinea-pig weighing about 250 gm. Twenty-four hours after inoculation a lump about the size of the little finger nail was easily palpable in the abdomen at the site of inoculation. The guinea-pig, after the first day, refused to eat, and died on the seventh day after inoculation. At postmortem, a rather discrete, large abscess was found subcutaneously around the site of inoculation. The abscess extended into the peritoneal cavity and involved the omentum, spleen, colon and the lower lobe of the liver. Scattered, small discrete abscesses were also found on the under surface of the

* From the Department of Bacteriology, Hoagland Laboratory, Long Island College Hospital.

1. Ashford, B. K.: Etiology of Sprue, Am. J. M. Sc. **154**: 157 (Aug.) 1917.

colon and in the liver. The gallbladder was dilated, the fluid increased in amount, hemorrhagic, and contained a large white mass resembling a colony of yeasts. From the gallbladder, as well as from a liver abscess, *Monilia* was recovered in culture, mixed with *Staphylococcus aureus*.

SUMMARY

From this case of sprue, a yeast was recovered which corresponds in the main to *Monilia* of Ashford. It is perhaps somewhat of interest because there are few recorded cases of sprue studied in temperate climates from an etiologic standpoint.

The organism was isolated on + 1 glucose agar plates from the stool, tongue, sputum and a tooth abscess.

Intraperitoneal injection of a guinea-pig killed the animal in seven days, and from the liver and gallbladder, the yeast was recovered, mixed with *Staphylococcus aureus*.

Henry and Pacific Streets.

Clinical Notes, Suggestions, and New Instruments

A NEW STAIN FOR DIPHTHERIA BACILLI *

HENRY ALBERT, M.D., IOWA CITY

The report of one or several "new" stains for diphtheria bacilli almost every year since 1895 would seem to indicate that none of those previously recommended have been entirely satisfactory.

I have tried practically every stain heretofore described. A rather critical review of these will appear before long in the *American Journal of Public Health*.

My purpose here is to make available the formula for a new method of staining diphtheria bacilli which I have developed and which my associates and I have found to be more satisfactory than any stain heretofore described. Two solutions are used:

SOLUTION 1

Toluidin blue	0.15 gm.
Acetic acid (glacial)	1.00 c.c.
Alcohol (95 per cent.)	2.00 c.c.
Water (distilled)	100.00 c.c.

Solution 2 is the same as the iodin solution used in the Gram stain:

SOLUTION 2

Iodin	1 gm.
Potassium iodid	2 gm.
Water (distilled)	300 c.c.

TECHNIC OF STAINING

Smears are made on slides or cover glasses in the usual manner, fixed by heat, and stained with toluidin blue solution for five minutes. The stain is then drained off without washing, and the iodin solution applied for one minute. It is then briefly washed with water and dried, preferably by means of filter paper. It is now ready for examination.

Occasional lots of toluidin blue stain the diphtheria too uniformly. One that stains the granules well should be selected.

If staining is done in staining dishes, the iodin solution should be replaced with a fresh supply daily, since a precipitate results from the introduction of the toluidin blue stain carried over on the slide.

MICROSCOPIC PICTURE

The granules of the diphtheria bacilli are stained black—standing out in marked contrast to other elements in the microscopic field. The bars of the bacilli take a color varying from dark green to black; and the intermediate portions, as well as other bacteria, take a light green.

The granules of diphtheria bacilli stand out very much more prominently than they do when stained by Loeffler's methylene blue and other stains that are commonly employed. The bars stain with varying intensity. Sometimes they stand out better, sometimes not so well as with the Loeffler stain. They are, however, easily recognized. In this respect it is much better than certain stains, such as the Neisser, which sometimes stain the granules very well.

ADVANTAGES

1. Diphtheria bacilli are more readily recognized by virtue of the fact that the granules of the bacilli stand out in very sharp contrast to other portions of the bacillus and more especially to other bacteria which are but feebly stained.
2. Diphtheria bacilli may be recognized in younger cultures, and hence the diagnosis made earlier.
3. The bacilli may be seen equally well by daylight and artificial light.
4. The results of staining are uniformly good.

* Brief description of a stain described before the Laboratory Section of the American Public Health Association at New Orleans, Oct. 26, 1919.

STEREOSCOPIC ROENTGENOGRAPHY WITH THE BEDSIDE UNIT *

HOWARD CURL, M.D., MADISON, WIS.

With the development by Dr. Coolidge of the self-rectifying roentgen-ray tube and the portable transformer, and the subsequent production of large numbers of these completed units, a long felt want has been realized.

Designed especially as a portable unit for bedside use in hospitals, they are nevertheless capable of handling a large part of the work that comes to the general practitioner. This fact, together with the low cost, ease of installation, and simplicity of operation, will mean that many of these units will soon be in the hands of the profession.

There is, however, one very important feature which until now the designers have apparently overlooked, and that is a means for shifting the tube for stereoscopic plates. The man accustomed to stereoscopy will feel this loss keenly, and the physician who has not yet learned to use stereoscopic roentgenography in his roentgenographic examinations should know that the difference between a single plate and

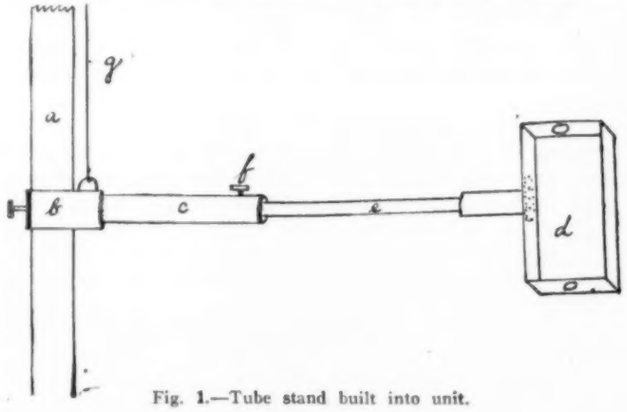

Fig. 1.—Tube stand built into unit.

a pair of stereoscopic plates is often the difference between failure and success in making a diagnosis. Especially is this true in regions about the hip or shoulder joint where it is impossible to obtain a two-way view.

Stereoscopic plates may be obtained with the bedside unit (1) by using a regular stereoscopic tube stand, or (2) by adapting the stand which is built into the unit to this type of work. The second method, besides being cheaper, eliminates the use of a second piece of apparatus. It is my purpose in this article to suggest a simple means of converting the unit tube stand into one that is suitable for stereoscopy.

Figure 1 illustrates the tube stand built into the unit: *a*, upright stand; *c*, horizontal sleeve, supporting extension

* From the Department of Clinical Medicine, University of Wisconsin Medical School.

arm *e*; *f*, screw for holding extension arm at any given setting; *d*, holder for self-rectifying tube, and *g*, wire cable passing over pulley to counter weight.

To obtain stereoscopic plates the extension arm was marked with circular grooves (Fig. 2, 6) at 6-cm. intervals. On this arm was also placed a sliding collar (5). The tube is adjusted over the patient with one of the circular markings on *e* flush with the end of the sleeve. The collar is set at 6-cm. distance, which will be at the next mark. The first

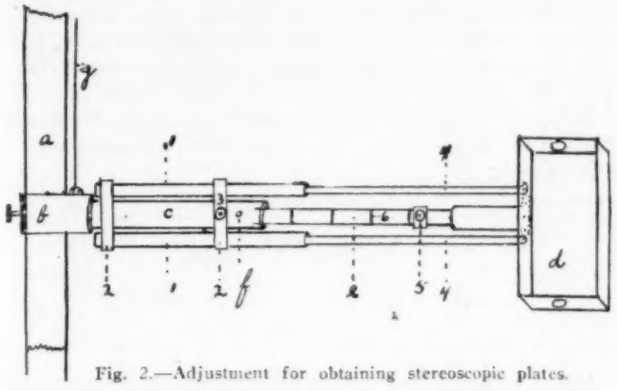

Fig. 2.—Adjustment for obtaining stereoscopic plates.

plate is taken, the tube is slid in as far as the collar will permit, and the second plate is taken. Care must be taken in shifting the tube to see that the tube does not rotate, i. e., that the same angle is preserved for the second plate. To eliminate this danger, we added two auxiliary sleeves (1, 1),

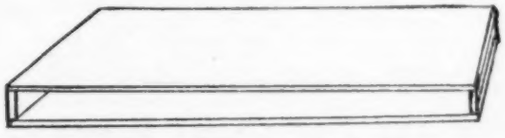

Fig. 3.—Plate changing tunnel.

parallel to *c* supported on it by two circular bands (2, 2). Two auxiliary rods (4, 4) fit into the sleeves. The tube may now be rotated to any angle and held by screw 3, screw *f* being no longer needed.

Thus, we have a tube stand with a horizontal displacement of several inches, a means for obtaining the regulation 6-cm. shift for stereoscopic plates, and a device for holding the tube at any desired angle while making the shift. With the aid of a plate changing tunnel, Figure 3, stereoscopic plates of any part of the body may be made at the bedside with a minimum of discomfort to the patient. This will be of especial value in fractures of the leg, femur or hip joint when the part is up in extension, and of which a two-way view would be difficult or impossible to obtain.

Tuberculosis in the Malay States.—Dr. J. T. Clarke, health officer of Kinta, has collected evidence in support of his thesis that the "massive dose" of tubercle bacilli is the all important factor in the causation of phthisis. He notes, as rather remarkable, that there is a higher proportion of phthisis among Chinese males than females in Singapore, the proportion being 6.04 to 3.81. But if all cases of phthisis, bronchitis and pneumonia be classed together, the difference is much less, the proportion being 8.99 males to 8.1 females. Bovine tuberculosis does not exist in the Malay Peninsula; no case of tubercle in a domestic animal has been discovered, and among more than 250,000 pigs killed in the Ipoh abattoirs during the last four years, there was no case of tuberculosis. The disease in man must, therefore, be exclusively due to infection from human sources. In Singapore, phthisis causes 16 per cent. of the total deaths. Discussing von Behring's theory of infection, which he rejects, Dr. Clarke observes that the Chinese seldom take milk, even as children, and that in the straits settlements the cattle are at present free from tuberculosis.—*Lancet*, Nov. 29, 1919.

Therapeutics

A DEPARTMENT DEVOTED TO THE IMPROVEMENT OF THERAPY. A FORUM FOR THE DISCUSSION OF THE USE OF DRUGS AND OTHER REMEDIES IN THE TREATMENT OF DISEASE.

USE AND ABUSE OF CATHARTICS*

(*Continued from page 1939*)

PHENOLPHTHALEIN

About twenty years ago the Hungarian government decreed that wine, adulterated by certain harmless additions, be earmarked by means of phenolphthalein, because of the property of this substance of assuming a brilliant red color on addition of alkali, and of its supposed harmlessness. This was done with the intention of enabling the poor man to buy this "necessity of life" at a price within his reach. But it was soon found that people partaking freely of this wine suffered from diarrhea, which at one and the same time led to a hasty repeal of the law and the discovery of a new purgative.

This recent addition to the cumbersome list of cathartics is of interest only because of the fact that it is almost tasteless and is active in small doses. It lends itself admirably to palatable administration, even to being given in the form of bonbons, which makes it especially suitable for children and for the insane; though women generally and even men prefer it on account of the inoffensiveness of its taste.

It is a yellowish-white powder, odorless and almost tasteless, very slightly soluble in water, and soluble in alcohol (13 parts) and in aqueous solutions of alkalis, yielding a pink fluid. It is also soluble in olive oil to the extent of about 2 per cent.

Being insoluble in acids, it passes through the stomach unchanged; hence it may be given in conditions of gastric irritation when many other cathartics would be contraindicated. On reaching the intestine, it is partially dissolved in the alkaline secretions, becoming converted into salts which are irritant, and thus becoming active. Very little is absorbed; more than 85 per cent. of it has been found unchanged in the feces. After large doses, however, traces are found in the urine, which then turns pink when rendered alkaline by decomposition or otherwise. That it does not irritate the kidney is shown by the fact that subcutaneous injection of a very similar substance—phenolsulphonephthalein—has become an accepted test for the functional capacity of the kidney. There are no known systemic effects produced after absorption.

Phenolphthalein probably acts chiefly by influence on peristalsis; in other words, it belongs among such drugs as cascara sagrada and senna, so far as mode of action is concerned. It is even effective as a cathartic when given subcutaneously, though Abel and Rowntree[1] found phenoltetrachlorphthalein (0.4 gm. in 20 c.c. of oil) superior for this purpose.

The chief disadvantage of phenolphthalein is a certain degree of variability of action. At times, a small dose acts excessively; at times, a larger dose fails to act. An overdose, and in especially susceptible persons even a therapeutic dose, may cause, in addition to free

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* This is the twelfth of a series of articles on the pharmacology, physiology and practical application of the common laxatives and cathartics. The first article appeared October 18.

1. Abel and Rowntree: J. Pharmacol. & Exper. Therap. **1**: 231 (Aug.) 1909.

purgation and colic, rapid pulse, palpitation, difficult breathing and general uneasiness, even collapse. The substance is otherwise quite free from toxic tendency. Doses of several grams have been tolerated without more severe effects than those just detailed. There are no fatal cases on record.

It should be borne in mind that phenolphthalein may cause reddish stools, when the reaction of the evacuation is alkaline, or is made so by a soap enema, for instance. Under such circumstances, the suspicion may arise that there is blood in the stools. Of course, the diagnosis can readily be made by the fact that acidification removes the color, which reappears when excess of alkali is added. In view of the frequency with which this drug is now being used, we must beware of making a diagnosis of blood in the stools by mere inspection.

The dose of phenolphthalein for adults is from 0.10 to 0.20 gm. (1½ to 3 grains). The U. S. Pharmacopeia states that the average dose is 0.15 gm., or 2½ grains. As little as 0.06 gm. (1 grain) is often sufficient for an adult, and this dose is none too large for a child. Babies aged 18 months are given 0.03 gm. (one-half grain). In obstinate cases, as for instance bedridden patients, from 0.5 to 1.0 gm. (8 to 15 grains) may be given without fear. It will be noted that, on the whole, the dose of this drug is quite independent of age. It is also true that at any age the effect is somewhat independent of dose. Evidently the activity depends on the amount of alkali in the intestine available for solution; and it is probable that variation in intestinal reaction accounts for the variability in intensity of action.

As phenolphthalein is a comparatively slowly acting drug, requiring from six to twelve hours for effect, it is generally given at bedtime. While, when large doses are needed, these would best be prescribed in powder form, the usual method of administration for the ordinary dose is in the form of sweet tablets to be eaten like candy. The National Formulary contains a formula for pink, vanilla flavored *troches of phenolphthalein*, each containing 0.06 gm. (1 grain) of the drug. These are made with acacia, and therefore disintegrate rather slowly. This is undesirable. Lozenges made in this way are suitable for mouth and throat medication; more rapid disintegration is desirable in candy medication for systemic action, as sick children sometimes refuse to suck candies that healthy children would enjoy. Friable tablets can be obtained by light compression in a tablet machine. The following formula[2] will yield such a product, which can be prepared extemporaneously by a pharmacist equipped with a tablet machine. Without compression into tablets the same formula yields a palatable powder.

SWEET TABLETS OF PHENOLPHTHALEIN, 0.06 GM. EACH

Phenolphthalein	6.00 gm.
Saccharin	0.12 gm.
Tincture of vanilla	1.50 c.c.
Cacao powder	3.00 gm.
Sugar, powdered	21.00 gm.

Mix the saccharin with the tincture of vanilla and incorporate the phenolphthalein. Finally add the sugar and the cacao by thorough trituration in a mortar. Compress in a tablet machine, using ⅜-inch die and punches, to make 100 0.30 gm. tablets.

All the various manufacturing houses of pharmaceuticals put up fairly acceptable sweet tablets containing 0.06 gm. each and up to 0.30 gm. Such tablets might simply be prescribed for as follows:

℞ 12 Sweet tablets of phenolphthalein..0.06 gm. (1 grain) each
Label: One or two at bedtime.

For infants, sweet tablets might be crushed and given in a little water.

The novelty and the inoffensiveness of this remedy has rendered it an inviting object for commercial exploitation. Soon after its introduction, the market became literally flooded with phenolphthalein in various disguises and combinations, the only original feature of most of which was a coined name. The following is a partial list of names under which phenolphthalein preparations and combinations are or were advertised:

Alophen,	Paraphthalein,	Purglets,
Cholelith Pills,	Phenalein,	Purgo,
Elzernac,	Phenolax Wafers,	Purgolade,
Ex Lax,	Phenolphthalein Laxative,	Purgotin,
Exurgine,	Probilin,	Purgylum,
Laxophen,	Prunoids,	Rhuphen,
Laxine,	Purgatol,	Thalosen,
Laxirconfect,	Purgen Konfect,	Veracolate,
Laxothalen Tablets,	Purgella,	Zam Zam.

What a Babeldom would arise in medical practice if this business policy of manufacturers to protect their product by coined names were encouraged by the patronage of physicians. Self-respecting manufacturers owe it to the progress of medical science to do away with such camouflage for revenue only; and the medical profession owes recognition to these manufacturers by prescribing products by their scientific names.

(To be continued)

2. From Fantus, Bernard: Candy Medication, St. Louis, C. V. Mosby Company, 1915.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

SULPHOICHTHYOLATE PREPARATIONS

(See N. N. R., 1919, p. 319)

ICHTHYOL.—Ammonium Ichthyol.—An aqueous solution the important medicinal constituents of which are ammonium compounds containing sulphur in the form of sulphonates, sulphones, and sulphides. These characteristic forms of sulphur result from the sulphonation of the tar-like distillate obtained from the bituminous shales, found near Seefeld in the Tyrol, and containing the fossil remains of fish.

Actions and Uses.—Ichthyol is weakly antiseptic and mildly irritant. It penetrates the skin to some extent and is said to cause some vasoconstriction on mucous membranes. Taken internally it produces some gastro-intestinal irritation, with diarrhea, etc. Its influence on metabolism has not been determined.

It is used locally under the supposition that it will secure the absorption of swellings and effusions in contusions, burns, etc., and especially in gynecologic practice, and in various skin diseases. Ichthyol has been tried internally in a great variety of conditions, but its therapeutic value in many of its suggested applications has not been fully established.

Dosage.—Internally, from 0.2 to 2 Cc. (3 to 30 minims) mostly in simple solutions in water, or peppermint water, sometimes in the form of pills or capsules. Locally, in vaginal, uterine or rectal suppositories, in from 0.06 to 0.18 Cc. (1 to 3 minims) bougies, or from 1 to 3 per cent. solution in treatment of gonorrhea. Ointments containing from 10 to 40 per cent. petrolatum may be prepared, using as a base fat, lanolin or petrolatum.

Manufactured by the Ichthyol Co., Hamburg, Germany (Merck & Co., New York). German patent No. 35,216. U. S. trademark No. 62,603.

Ichthyol is a reddish-brown to brown-black, syrupy liquid having a characteristic, empyreumatic odor and burning taste.

It should be completely soluble in water; incompletely soluble in alcohol or ether, but nearly soluble in a mixture of equal volumes of alcohol and ether; also soluble in a mixture of equal volumes of alcohol, water and ether. It is miscible with glycerine.

The aqueous solution of ichthyol (1:10) has a faintly acid reaction on blue litmus paper. The aqueous solution of ichthyol (1:10) yields a greenish-black, resin-like precipitate on the addition of hydrochloric acid. This precipitate is nearly insoluble in ether; it is partially soluble in alcohol; soluble in water, but if dissolved in the latter solvent it may again be precipitated from solution by the addition of hydrochloric acid. With barium chloride test solution the aqueous solution of ichthyol (1:10) gives a brownish-black precipitate which is insoluble in diluted hydrochloric acid. If the aqueous solution (1:10) be boiled with potassium hydroxide test solution ammonia should be evolved. If 1 Gm. of ichthyol be ignited it should leave no weighable residue. If 10 Gm. of ichthyol be diluted with 90 Cc. of water, the mixture placed in a glass-stoppered cylinder and allowed to remain undisturbed for twenty-four hours, no deposit should form.

If dried at 100 C. ichthyol should not lose more than 47.0 per cent. of its weight (absence of an undue amount of *water*). If from 5 to 6 Gm. of ichthyol be weighed into a flask, 25 Cc. of potassium hydroxide test solution and 100 Cc. of water be added, the mixture distilled until no more ammonia passes over, the distillate collected in 15 Cc. of normal sulphuric acid to which 1 drop of methyl orange test solution has been added, and the excess of acid then titrated with tenth-normal potassium hydroxide, the amount of normal sulphuric acid consumed should correspond to from 2.9 to 3.4 per cent. of total ammonia (NH_3). If from 5 to 6 Gm. of ichthyol be weighed into a beaker, diluted with 50 Cc. of water, 10 Cc. of a 10 per cent. solution of albumin added, followed by 5 portions of 5 Cc. each of diluted hydrochloric acid, shaking after each addition, the mixture made up to a volume of 500 Cc. and filtered through a dry filter, and if 200 Cc. of the filtrate be heated to boiling, 10 Cc. of barium chloride test solution added, the mixture allowed to stand for twenty-four hours, the precipitate of barium sulphate collected, heated and weighed in the usual way, the weight of barium sulphate obtained should correspond to from 5.7 to 6.2 per cent. of ammonium sulphate. If from 0.5 to 1 Gm. of ichthyol be weighed into a Kjeldahl flask, diluted with 30 Cc. of water, 5 Gm. of potassium chlorate added, followed by 30 Cc. of nitric acid, the mixture evaporated to about 5 Cc., 25 Cc. of hydrochloric acid added, this solution evaporated to about 5 Cc., 25 Cc. of hydrochloric acid again added, this solution evaporated to about 5 Cc., 100 Cc. of water added, this solution heated to boiling, 10 Cc. of barium chloride test solution added, the mixture allowed to stand for twenty-four hours, the precipitate of barium sulphate collected, heated and weighed in the usual way, the weight of barium sulphate should correspond to at least 10 per cent. of total sulphur. If the ammonia contained in the ammonium sulphate as previously determined in ichthyol be calculated, and the result subtracted from the "total ammonia" as previously determined, the remainder should represent the ammonia combined with the organic-sulphonic acids. If this value be multiplied by 1.88 the result should represent the sulphur present in the sulphonic acids in an oxidized state, i. e., the "sulphonic sulphur." If the sulphur contained in the ammonium sulphate as previously determined in ichthyol be calculated, and the result subtracted from the "total sulphur" as previously determined, the remainder should represent the sulphur present in the organic sulphonic acids contained in the substance. If the "sulphonic" sulphur in ichthyol as previously calculated be subtracted from the sulphur in the organic-sulphonic acids as previously calculated, the remainder should correspond to at least 5.5 per cent. of "organic" ("sulphid") sulphur.

Ichthyol is incompatible with acid and saline solution, fixed alkalies, their carbonates and iodides, alkaloidal salts and mercuric chloride.

MERCUROCHROME-220

Preliminary Report of the Council on Pharmacy and Chemistry

A report on the experimental and clinical status of this new germicide for use in the genito-urinary tract by Young, White and Swartz was published in THE JOURNAL of the American Medical Association, Nov. 15, 1919. This product is prepared and marketed by Hynson, Westcott and Dunning, Baltimore, Md., who request its acceptance for New and Nonofficial Remedies. The available evidence on Mercurochrome-220 is thus far limited to the article mentioned—obviously confirmation of the work there reported is necessary before more than a tentative acceptance can be accorded. However, Mercurochrome-220 is a definite and nonsecret compound. This, together with the evidence presented in the publication referred to, may be sufficient to warrant its use by physicians, provided, however, it is recognized that its therapeutic status is in the experimental stage. The Council has, therefore, deferred acceptance of this product for New and Nonofficial Remedies, and authorized publication of this preliminary report.

For the information of those who desire to use this compound, the following preliminary statement, based chiefly on the article by Young, White and Swartz, of its physical and chemical properties, pharmacologic actions and proposed therapeutic application is published.

W. A. PUCKNER, Secretary.

MERCUROCHROME-220.—Mercurochrome-220 is stated to be dibromo-oxymercury fluorescein.

The empirical formula is $C_{20}H_{10}O_6Br_2Hg$.

Mercurochrome-220 is described as occurring as a red powder, odorless, containing about 28 per cent. of mercury.

Mercurochrome-220 is insoluble in water, but soluble in alkalies, forming a deep cherry-red solution which fluoresces on dilution. The solution is stable in the air at ordinary temperatures, is not affected by moderate heating and does not respond to the usual tests for mercury ions. Alkaline solutions are incompatible with acids. The solution stains the skin red but the stain may be removed by rubbing first with 2 per cent. potassium permanganate solution and then with 2 per cent. oxalic solution. On ignition, Mercurochrome-220 leaves no ash.

Pharmacologic Action.—According to Young, White and Swartz, this compound is a strong and rapidly active germicide; it is active in urine, a 1:1,000 solution killing *B. coli* and *Staphylococcus aureus* in this medium in one minute. It penetrates the tissues readily. The drug is tolerated in a strength of 1 per cent. by the bladder, renal pelvis and urethra; a 2.5 per cent. solution applied to the anterior urethra caused only temporary discomfort. The toxicity, when tested by intravenous injections into rabbits, was found to be rather high, 10 Mgm. per kilo, invariably causing death within 24 hours and 5 Mgm. causing a decrease in phenolsulphonephthalein output and an albuminuria that lasted about a week. Dogs were more resistant. No systemic effects have been observed following its local application in the human.

Therapeutic Applications.—The drug has been used by Young, White and Swartz in infections of the renal pelvis, in cystitis and urethritis and in chancroidal ulcerations. In the treatment of infections of the kidney pelvis, the ureters were catheterized and the pelvis gently filled with a 1 per cent. solution of the drug; the catheter was plugged and the solution retained in the pelvis for five minutes. In the treatment of bladder conditions, one ounce of the 1 per cent. solution was introduced into the bladder and retained for one hour or longer, the treatment being given daily or on alternate days or at longer intervals according to circumstances. In anterior gonococcus urethritis, the anterior urethra was filled with a 1 per cent. solution and retained for five minutes; if the posterior urethra was involved, the solution was gently forced into the posterior urethra and bladder and retained for an hour or more.

Later, in the treatment of acute anterior gonorrhea, 2.5 per cent. solution[1] was used every three hours. In the case of chancroidal ulcerations, the drug was applied as a moist dressing (1 per cent.) or as a starch paste (5 per cent.) or as an ointment (5 per cent.).

The results have been satisfactory and no untoward effects observed. Cases of long-standing, purulent cystitis have cleared up in a few days; in the case of gonorrhea, the discharge became free of the organisms in from three to seventeen days, the average being ten. The chancroidal ulcerations cleared off in from one to four days.

BARBITAL SODIUM (See N. N. R., 1919, p. 83).

Veronal-Sodium—A brand of barbital sodium complying with the N. N. R. standards.

Manufactured by the Winthrop Chemical Co., Inc., New York. U. S. patent No. 782,739. U. S. trademark No. 40,115.

PROCAINE (See New and Nonofficial Remedies, 1919, p. 30).

Procaine-Calco.—A brand of procaine complying with the N. N. R. standards.

Manufactured by the Calco Chemical Co., Bound Brook, N. J. U. S. Patent No. 812,554 (Feb. 13, 1906; expires 1923) by license of the U. S. Federal Trade Commission.

TYPHOID VACCINE (See New and Nonofficial Remedies, 1919, p. 292).

E. R. Squibb and Sons, New York.

Typhoid-Paratyphoid Bacterin (Special Bacterial Vaccine No. 13).—Marketed in 5 Cc. vials, each cubic centimeter containing 1,000 million killed *B. Typhosus*, 750 million killed *B. Paratyphosus* "A," and 750 million killed *B. Paratyphosus "B."*

1. In the article by Young, White and Swartz, J. A. M. A. **73**: 1483, 1919, it was stated that a 25 per cent. solution was being used; this was an error, J. A. M. A. **73**: 1708, 1919.

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SATURDAY, JANUARY 3, 1920

CAROTINEMIA

Abnormal pigmentation of the body, as well as the appearance of unusual pigments in the fluids and secretions of the organism, has always elicited the interest of physicians. In recent years a new appreciation of the significance of some of these manifestations has come through the recognition that certain ingested pigments, notably the so-called carotinoids, are easily incorporated into the tissues. Under the general designation of "lipochromes" they have been recognized as the coloring matters of milk fats and body fats, of egg yolk, of the corpus luteum, and of other structures. Recently the lipochrome of nerve cells has also been identified as carotinoid coloring matter—carotin and xanthophyll pigments—derived from the food.

Through numerous researches of Palmer and his associates[1] in this country, it has become known that different species vary in their tendency to carry carotinoids in the blood serum. Man represents one of those capable of such distribution of the pigments, frequently derived from plant sources, which tend to give a yellow color to body fats, analogous to that of butter and egg yolk. Not until quite recently has it been appreciated, however, that certain unusual colorations indicated by a yellowish complexion are referable to the food pigments. Under the designation of carotinemia, Hess and Myers[2] have recently described in THE JOURNAL what they regard as a new clinical picture. The yellow discoloration of the skin observed in their cases resembled a mild jaundice except for the noninvolvement of the sclera. Hence, as they suggest, this pigmentation has no doubt frequently been confused with mild grades of icterus or attributed to some obscure metabolic disturbance. Through the careful laboratory examinations made by Hess and Myers it is demonstrated that a diet rich in carotin, as it is furnished by carrots, spinach, egg yolk and oranges, may produce the manifestations. It is the merit of these American investigators to have demonstrated an actual carotinemia, that is, tingeing of the blood plasma with pigment which was chemically identified as carotin. They point out that as carotin pigment is a constituent of much of our vegetable food, carotin discolorations are most likely to occur in those subsisting on diets rich in vegetables.

By a coincidence attributable to war-time dietary conditions, necessitating widespread liberal use of vegetable foods, what is evidently the same type of coloration has been widely observed in Europe during the past few years. Kaupe[3] described the jaundice-like complexion of children in Bonn who had received considerable quantities of carrots as food. The pediatrician Stoeltzner[4] at Halle, who has observed similar cases after the ingestion of carrots, designates the condition as "pseudo-icterus," and issues a warning against confusion with jaundice. The lack of sclerotic discoloration affords an easy differential diagnosis. Klose,[5] who observed the same phenomenon in Silesia, has called attention to the peculiar hue or orange-yellow tint which serves to differentiate the discoloration due to carotin-bearing foods. He also points out that it is most commonly observed in the better nourished children. This can be understood if we recall that the carotin pigment is fat-soluble and hence tends to migrate more readily when an abundance of fat is available.

Moro[6] evidently observed long ago the same type of discoloration in infants after the feeding of so-called carrot soup, and its cause was ascribed to carotin at that time. The phenomenon is by no means confined to the young or adolescent individual. The possibility of comparatively larger intakes of the responsible pigments in the diet may render the incidence of the discoloration more frequent in children; or it may be that the paler skin of the young renders the yellow complexion more readily detected and hence only apparently more common in childhood. Schüssler[7] has described what is undoubtedly a carotinoid pigmentation in three men beyond middle life who had been obliged to subsist largely on carrots because of the shortage of potatoes where they lived. Furthermore, it was in adults that von Noorden and Salomon[8] observed the comparable pigmentation termed by them "xanthosis" and most frequently seen in diabetics, presumably because the latter frequently subsist on vegetable (that is, carotin-containing) diets. Hymans, van den Bergh and Snapper,[9] as well as Umber[10] sus-

1. Palmer, L. S., and Eckles, C. H.: J. Biol. Chem. **17**: 191, 211, 223, 237, 245 (March) 1914. Palmer, L. S.: Ibid. **23**: 261 (Nov.) 1915; **27**: 27 (Oct.) 1916.
2. Hess, A. F., and Myers, V. C.: Carotinemia: A New Clinical Picture, J. A. M. A. **73**: 1743 (Dec. 6) 1919.
3. Kaupe, W.: Hautverfärbung bei Säuglingen und Kleinkindern infolge der Nahrung, München. med. Wchnschr., March 21, 1919, p. 330.
4. Stoeltzner, W.: Ueber Psuedoikterus nach Mohrrübengenuss, München. med. Wchnschr., April 11, 1919, p. 419.
5. Klose, E.: Hautverfärbung bei Säuglingen und Kleinkindern infolge der Nahrung, München. med. Wchnschr., April 11, 1919, p. 419.
6. Moro, E.: München. med. Wchnschr., 1908, No. 29, p. 1562; ibid., June 13, 1919, p. 674.
7. Schüssler: Ueber Hautverfärbung durch Mohrrübengenuss, München. med. Wchnschr., May 30, 1919, p. 596.
8. Von Noorden: Internat. Dermatologenkongress, 1904. Salomon, H.: Von Noorden's Handbuch der Pathologie des Stoffwechsels, Ed. 2, **2**: 290; München. med. Wchnschr., May 23, 1919, p. 564.
9. Hymans, van den Bergh and Snapper: Deutsch. Arch. f. klin. Med. **110.**
10. Umber: Berl. klin. Wchnschr., 1916.

pected the identity of the "xanthosis" pigment with that of carrots. Spectroscopic examination seemed to verify this.

Hess and Myers,[2] whose investigations represent the latest word on this subject and thus serve to direct the attention of American clinicians to a phenomenon earlier noted in Europe, have noted that in cases of carotinemia the urine as well as the blood serum was colored yellow. When a small quantity of concentrated carotin was fed, the pigment reappeared rapidly in the urine. This significant fact, so far as we are aware, has never before been reported for man.[11] It will henceforth be necessary to deal with the possibility that some of the yellow urine pigment—the indefinite so-called urochrome—is of exogenous origin rather than the descendant of blood or bile pigments, as is now commonly taught.

METHYL—WOOD—ALCOHOL AND ITS END-PRODUCTS IN THE BODY

The menace of methyl alcohol or wood spirits to human health, though long known to physicians, has never been adequately appreciated by the public. Heretofore the dangers arising from its introduction into the body have for the most part been confined to some accidental or casual intake of the substance, and larger numbers of fatalities have arisen only in unusual circumstances, such as the criminal adulteration of alcoholic beverages with wood alcohol. With the enforcement of national prohibition, however, the prospect of more frequent instances of harm through the use of this intoxicant in place of the forbidden grain spirits and other drinks containing ordinary ethyl alcohol is unfortunately before the nation. Within the last few weeks the newspapers have reported the deaths of more than a hundred persons from the adulteration of alcoholic beverages with methyl alcohol. It therefore becomes more necessary than ever to understand the toxicology of methyl alcohol and its behavior in the body. To combat an enemy we must learn to know its mode of attack.

Chemically, the difference between methyl alcohol (CH_3OH) and ethyl alcohol (CH_3CH_2OH) is not striking, though the methods of preparation are dissimilar. When wood is subjected to destructive distillation, methyl alcohol is one of the products formed. Ethyl alcohol is derived from the fermentation of grains or fruits. Wood alcohol, about 10 per cent., may be added to ethyl alcohol to render the latter unfit for beverage purposes, and the government has ruled recently that such denatured alcohol must bear on the label a special warning concerning the dangers of methyl alcohol. Elsewhere in this issue appears the report of a case of wood alcohol poisoning thoroughly studied with reference to the symptomatology and pathology.[1] When death occurs, there is usually coma, with death from respiratory paralysis. According to our present knowledge, methyl alcohol is eliminated slowly from the body, an end-product of the oxidation in the body being formic acid.

Formic acid, HCOOH, has been recognized as an excretory product of methyl alcohol since Pohl[2] demonstrated, in 1895, that introduction of this alcohol into the stomach leads to an increased output of formic acid in the urine. Hence the latter affords a possible means of ascertaining whether or not wood alcohol has been taken into the organism. A mere qualitative test for formic acid, however, will not suffice; for this substance has been known, at least since 1877,[3] as a normal constituent of the urine. Therefore it is essential to know something regarding the extent to which formic acid may occur in the urine under what may be called normal conditions of living. According to Autenrieth,[4] the quantity eliminated may vary considerably in different persons, though it tends to exhibit a uniformity in an individual living on a fairly uniform diet. The figures approximate 0.25 gm. a day as an illustrative average.

When methyl alcohol is ingested, the output of formic acid in the urine promptly increases. For example, a person who had taken 80 gm. of pure methyl alcohol in the course of eight days showed an extra elimination of formic acid above his usual output equivalent to 5 per cent. or more of the consumed spirits. It will be observed that even when these relatively innocuous doses were taken, a quantitative investigation betrayed the intake. With larger doses, methyl alcohol itself, which is missed in such instances as that just cited, may appear in the urine. Other alleged precursors of formic acid, such as glucose, and lactic acid which might readily be taken into the body in exceptionally large quantities in the course of an ordinary regimen, were found by Autenrieth to be without appreciable influence on the output. Formaldehyd, HCOH, did not produce an increment; but formic acid itself was quite resistant to oxidation in the body, so that unlike many other organic acids it again reappeared in the urine in considerable proportions unchanged. Fortified with these facts, the chemist will be better prepared to ascertain the occurrence of poisoning with wood alcohol when the direct evidence may be lacking or inconclusive. At the present juncture the public should be made to appreciate that methyl alcohol is a dangerous poison; that one of its serious effects is permanent blindness, and that it may be so prepared as to be ordinarily indistinguishable by

11. Kaupe (Footnote 3) specially records the absence of apparent changes in the urine in the cases observed by him.

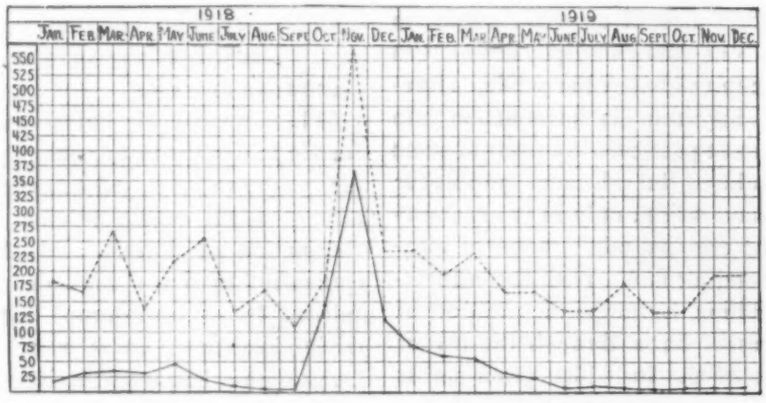
1. Harrop, G. A., Jr., and Benedict, E. M.: Acute Methyl Alcohol Poisoning Associated with Acidosis, THE JOURNAL, this issue, p. 25.
2. Pohl, J.: Arch. f. Exper. Path. u. Pharmakol. **31**: 286, 1895.
3. Thudichum: Arch. f. d. ges. Physiol. **15**: 129, 1877.
4. Autenrieth, W.: Ueber den Ameisensäuregehalt des Harns, normalerweise und nach Eingabe verschiedener Substanzen, München. med. Wchnschr., Aug. 1, 1919, No. 31, p. 862.

odor or taste from ethyl alcohol. It should be emphasized that the selling or promoting the sale of or use of either methyl or ethyl alcohol as a beverage is the doing of an unlawful act.

DEATHS OF PHYSICIANS IN 1919

During 1919, the deaths of 2,105 physicians of the United States and Canada were noted in THE JOURNAL. Adding 2.5 per cent. to this number on account of delayed reports and possible omissions, we may estimate the total number of deaths to have been 2,163. As the total number of physicians classified in the American Medical Directory is 159,444, we may estimate that the annual death rate approximates 13.29 per thousand. The average annual mortality for the period from 1914 to 1919, inclusive, is approximately 14.81.

Ages.—The age at death varied from 24 to 100, with an average of 59 years, 1 month and 25 days. Of the decedents, 88 were under 30; 239 between 31 and 40; 280 between 41 and 50; 442 between 51 and 60; 498 between 61 and 70; 366 between 71 and 80; 156 between 81 and 90, and 18 between 91 and 100. The greatest mortality occurred at the age of 59, at which 62 deaths were recorded.



Deaths from influenzal pneumonia and from all causes during 1918-1919: solid line, deaths from influenzal pneumonia; broken line, deaths from all causes.

Years of Practice.—The number of years of practice varied from 1 to 76, the average being 32 years, 5 months and 26 days.

Causes of Death.—General diseases caused 250 deaths; diseases of the nervous system, 248; diseases of the circulatory system, 369; diseases of the respiratory system, 334; diseases of the digestive system, 114; diseases of the genito-urinary system and skin, 156; senility, 320; suicide, 38; accident, 103; homicide, 35, and 90 deaths occurred after surgical operations. Among the principal assigned causes of death were: pneumonia, including influenzal pneumonia, 313; organic heart disease, 222; cerebral hemorrhage, 203; nephritis, 121; malignant disease, 78; tuberculosis, 66; angina pectoris, 53; arteriosclerosis, 35; septicemia, 31; diabetes, 30; appendicitis, 27; myocarditis, 23; uremia, 17; anemia, 16; kidney disease (unclassified), 15; cirrhosis of the liver, and gastritis, each, 14; peritonitis, 12; acute dilatation of the heart, and endocarditis, each, 11; embolism and thrombosis, each, 10, and other diseases, less than 10.

Violence.—There were 176 deaths from violence. Of these, 103 were due to accident and were: automobile, 42; automobile-railway (grade crossing), 15; poison, 10; drowning, 7; street car accidents, falls and railway accidents, each 5; injuries by horses and vehicles, 3; asphyxia, gunshot wounds and other accidental traumatisms, each 2; aeroplane, injuries by animals, explosion, burns and crushing, each 1. The 38 physicians who ended their lives by suicide selected the following methods: firearms, 18; poison, 11; strangulation, 3; cutting instruments, and causes not stated, each, 2; asphyxia, 1, and jumping from high places, 1. Of the 35 homicides, 21 occurred as the result of wounds received in battle; 10 were due to firearms; 3 were unclassified, and one was due to strangulation.

Influenzal Pneumonia.—The graphic chart shows the deaths of physicians from pneumonia and influenzal pneumonia and from all causes for the years 1918 and 1919, and indicates clearly the exceedingly rapid increase that occurred during October, November and December, 1918.

Military Service.—The deaths of 21 officers of the Army and Navy are reported to have occurred as the result of wounds received in battle; 37 officers died abroad from disease; 3, from accident; 2, from suicide, and one was murdered. During the year, 143 physicians died who had served in the Civil War, and of these 33 had followed the fortunes of the Confederacy, 45 had been officers of the United States Volunteers, 17 were veterans of the war with Spain, and 5 had served in foreign wars. The Medical Corps of the Army, including the Medical Reserve Corps, lost 325 officers and 11 contract or acting assistant surgeons. The Navy lost 29 medical officers, the United States Public Health Service, 9; the United States Indian Service, 4, and the organized militia, 22, of whom 5 had attained the grade of Surgeon-General.

Civil Positions.—Of those who died, one had been a member of Congress; 22, members of the lower house of legislature; 29 had been mayors; 15 had been members of state boards of health; 12, members of state boards of medical examiners, and 2, members of other state boards.

Association Officers.—Among those who died, one had been President of the American Medical Association, three had been members of the House of Delegates, and two members of the Board of Trustees.

THE TEACHING OF CLINICAL MEDICINE

Teachers of technical subjects naturally fall into one of two groups: first, the type whose interests lie mainly in the philosophic aspects of the subject taught, and second, the type who think of problems in terms of the individual. As Addis[1] has recently pointed out, this is true of clinical medicine, and it is equally true of clinical surgery or of any other clinical subject. Some clinicians who are mainly interested in underlying principles may be described as the investigative type. Others who are chiefly interested in the problem of the individual patient may be regarded as the practical type.

Quite frequently it has been assumed, particularly by the general practitioner and by the man on the street, that the two types are antagonistic, and this assumption is not without some basis in fact. It is doubtless true that the person with the investigative type of mind dislikes to be torn from his laboratory to attend to the details of the wards. We can all recall John Hunter's famous remark under circumstances of this sort that he must "go out and earn that damned guinea." It is equally true that the so-called practical clinician finds it difficult to detach himself from the study of disease in the patient to study disease by laboratory investigation. To this extent there is antagonism between the two types of clinicians; but the assumption that the investigative type is necessarily a feebleminded putterer when it comes to practical medicine is not correct. Nor is it correct to assume that the practical type of clinician is incapable of grasping the principles of research and of appreciating its importance.

As Addis points out, the teacher of clinical medicine at the present time is in difficulties because he is expected to combine in one person the attributes of these two types. He is expected to be a practical clinician capable of diagnosing and treating disease in the individual, and he is also required to demonstrate his ability to do laboratory research. True, there are those who possess the characteristics of both types, but they are exceptional. The details concerned in the study and treatment of disease have become more and more complicated as our theoretical knowledge has increased. New principles and new methods are constantly being discovered by the investigator, and new applications of these principles and methods to clinical work are continually being made. This has caused a great increase in the routine work involved in the study of a given case and has greatly complicated the task of the practical clinician. Indeed, as Addis points out, the complexity of modern diagnosis and of modern treatment is so great that all of the energies of one man may well be utilized in organizing and conducting this side of the work of a teaching hospital.

1. Addis: Edinburgh M. J., N. S. **23**: 235, 1919.

It is quite possible that, as has been suggested, we are approaching the time when there will be two types of persons connected with each clinical department, namely, the clinical physiologist, whose chief work will be the intensive study of selected groups of cases and the instruction of students in the application of the principles of physiology to the elucidation of disease, and the clinician, whose chief function will be the care of the patient and the instruction of the student in the practical methods of diagnosis and treatment. Obviously, some such arrangement already exists in some of our better schools. In institutions in which full time medicine has been introduced, there has been a distinct effort to appoint as heads of the clinical departments men of the investigative type. One question that Addis' discussion raises is whether in our enthusiasm for laboratory research we have not overlooked the importance of purely clinical investigation and of the type of physician that naturally tends toward this.

Current Comment

HORSE SERUM VS. DIPHTHERIA ANTITOXIN

Many physicians have been wondering what would be revealed when the veil was raised which has hidden Germany and Austria from the rest of the world during the war. Physicians have been scanning German literature as it began to filter in to see what the Germans have done in medical science. Thus far nothing has been revealed which might be regarded as epoch making. One episode is especially interesting and worthy of note. We are indebted to *Medical Science, Abstracts and Reviews* of London for the references referred to. The average physician believes that the use of diphtheria antitoxin in the treatment of diphtheria had long ago been accepted as a specific and satisfactory method. It has often been cited as typical of definite progress in therapeutics and as an example of what scientific medicine has accomplished. It was stratling, therefore, to read that a German investigator, Bingel,[1] perhaps carried away by recent work with nonspecific proteins had come to the conclusion that ordinary horse serum was just as effective as antidiphtheritic serum. He reports his conclusions in 471 cases of diphtheria treated with antitoxin, comparing them with 466 cases treated with ordinary horse serum; he claims to have found no difference in the results; in fact, that the results with ordinary horse serum in some instances were better. He concluded finally that the success of serum therapy in diphtheria could not be attributed to the antitoxin content of the serum and suggested that the large doses used, containing thereby large quantities of horse serum, were responsible for the good results. As might have been expected, Bingel's results and conclusions were not accepted. Numerous articles

1. Bingel, A.: Ueber Behandlung der Diphtherie mit gewöhnlichem Pferdeserum (Vergleich zwischen 471 mit antitoxischem Diphtherieheilserum und 466 mit gewöhnlichem Pferdeserum behandelten Diphtheriefällen—kein Unterschied), Deutsch. Arch. f. klin. Med. **125**: 284-332, 1918.

appeared invalidating the conclusions. Feer,[2] working in the Zurich University Children's Clinic, at once compared sixty-five cases of diphtheria treated with antitoxin with fifty-seven treated with ordinary serum, giving the ordinary serum only in mild cases. He found that the cases treated with ordinary serum, although mild and not ill for so long a time as the others, required five to seven days for the throat to become clean, as compared with three days for those treated by antitoxin. In six cases it was necessary to inject diphtheria antitoxin subsequently in order to obtain a satisfactory result. Moreover, he observed that the membrane again appeared in from three to nine days after the injection of ordinary serum. His results were so definitely in favor of antitoxin that the experiment was not continued. Feer was unable to understand Bingel's results and even suggests that they may have been due to his having used serum from horses which had previously supplied antitoxin. In the same way other German clinicians and experimenters, including Joannovics,[3] Friedberger[4] and Kolle,[5] confirmed the prophylactic and curative value of diphtheria antitoxin and demonstrated the inefficacy of ordinary horse serum in experimental diphtheria.

THE PROTEIN SHOCK REACTION

When vaccine therapy came into vogue many years ago, one of the points on which the earlier writers laid emphasis was the specificity of the reaction. As time has gone on, more and more doubt has been expressed regarding this specificity. It has been shown experimentally that a variety of substances of a protein nature are capable, when introduced into the body, of causing a reaction on the part of the body cells and fluids with the stimulation of the immunity-producing mechanism. Practical advantage of these studies in the treatment of disease was first sought in this country. Among the earlier studies were those of Miller and Lusk, of Cecil, and of Gay, which indicated the possible value of this form of treatment. In typhoid fever to some extent, but particularly in the treatment of various forms of arthritis, the administration of protein has proved of value. Such administration leads to a reaction that is now spoken of as the protein shock reaction, and this reaction is indeed the greatest drawback to the treatment. Patients capable of reacting to the treatment usually have a severe chill with fever and very often headache and general pains, which may be accompanied by nausea and vomiting and may last for several hours. This is accompanied by a primary fall and a secondary rise in the leukocytes, which may be taken as an indication that the tissues are reacting. Recently Gow[6] has substantiated previous studies regarding the reaction on the part of the leukocytes and the general reaction on the part of the patient. While the method is not one that has as yet been widely used, it seems to merit more extensive, careful study.

2. Feer, E.: Zur Behandlung der Diphtherie mit gewöhnlichem Pferdeserum, München. med. Wchnschr. **66**: 343-344, 1919.
3. Joannovics, G.: Zur Behandlung der Diphtherie mit gewöhnlichem Pferdeserum, Wien. klin. Wchnschr. **32**: 220-222, 1919.
4. Friedberger, E.: Hat das normale Pferdeserum einen Einfluss auf die experimentelle Infektion des Meerschweinchens mit Diphtheriebazillen? Berl. klin. Wchnschr. **56**: 151-158, 1919.
5. Kolle, W., and Schlossberger, H.: Zur Frage der Heilwirkung des Diphtherieserums, Med. Klin. **15**: 553-555, 1919.
6. Gow: Quart. J. Med. **13**: 82, 1919.

SIR WILLIAM OSLER

Osler is dead. These three words announce the passing of a man most influential for all that was good; noted for his kindly spirit, well beloved as a teacher and physician. The life of Sir William Osler, more than his works, placed him at the pinnacle of his profession. His winning personality, his cheerful disposition, his faith in mankind, but above all his love for his profession made him what he was—the great physician. Added to these is the fact that from boyhood to his last illness he was a tireless student, an enthusiastic, unceasing worker. His contributions to medical literature, recently compiled, include 730 titles; elegance of style, conciseness of statement and literary quality of his manuscripts marked him as a careful, conscientious writer. His contributions, whether as textbook, periodical literature or spoken word, were examples of masterly English diction. During his long career Sir William Osler was the recipient of practically every honor which the medical profession could bestow on those of merit in its ranks, culminating last July in the international celebration of his seventieth birthday. The occasion was marked by the felicitations and congratulations of the medical world. A memorial volume was prepared containing essays by students and colleagues and presented to him by a distinguished committee. In response to the presentation address Dr. Osler said:

"To have had the benediction of friendship follow one like a shadow, to have always had the sense of comradeship in work, without the petty pinpricks of jealousies and controversies, to be able to rehearse in the sessions of sweet, silent thought the experiences of long years without a single bitter memory, fill the heart with gratitude. That three transplantations have been borne successfully is a witness to the brotherly care with which you have tended me. Loving our profession, and believing ardently in its future, I have been content to live in it and for it. A moving ambition to become a good teacher and a sound clinician was fostered by opportunities of an exceptional character, and any success I may have attained must be attributed in large part to the unceasing kindness of colleagues and to a long series of devoted pupils whose success in life is my special pride."

The statement quoted is characteristic of the man. It shows why he was loved, why he succeeded—why his name will appear in the history of medicine as an example of the ideal physician.

Cuba's Fine Smallpox Record.—Our exchange *Vida Nueva* of Havana cites the recent smallpox death rate in various countries from 70 in France, 78 in England and 1,057 in Portugal to Spain's 1,262, while Cuba was the only country on the direct paths of commerce which had no cases. Havana had 1,654 cases in 1887; 1,404 in 1897; 2 in 1900, and then for ten years not a single case. As was mentioned recently, there has been a small epidemic in Cuba, for the first time in seventeen years, notwithstanding the opportunities for importation of the disease.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Convicted of Misuse of Mails.—Dr. George F. Purcell of Los Angeles was found guilty of misusing the mails to give information where an illegal operation might be performed. The case is the first of a series of six brought by the government for similar offenses.

Illegal Practitioners Arrested.—Drs. Harry G. Palmer and Jay G. McMath, osteopaths of Compton, according to report, have been arrested on a charge that they murdered Mrs. Marie Vegas Martinez, who died as the result of an alleged illegal operation performed by them. The report states also that T. Wah Hing, a Chinese herb doctor, who has been practicing in Sacramento for many years, was convicted of practicing medicine without a state license.

Personal.—Dr. John A. Reily, medical superintendent of the State Hospital, Patton, has been reelected executive head of the institution.——Dr. Ethel M. Watters, San Francisco, has been appointed head of the new bureau of child hygiene.——Dr. Ray W. Karras has been reappointed surgeon to the Soldiers' Home, Los Angeles.——Robert M. Dodsworth, Major, M. C., U. S. Army, Long Beach, was honor guest at the meeting of the Harbor Medical Association, November 28.

Popular Medical Lectures.—Stanford University Medical School announces the thirty-eighth course of popular medical lectures, to be given at Lane Hall, San Francisco, on alternate Friday evenings at 8 o'clock.

Jan. 9, 1920: "The Cause and Prevention of Nervousness," by Dr. Julian Mast Woltsohn, San Francisco; Jan. 23: "The Philosophy, Cause and Prevention of Disease," by Dr. Walter V. Brem, Los Angeles; Feb. 6: "The Hospital and the Public," by Dr. William Raymond Dorr, San Francisco; Feb. 20: "The Out-patient Clinic as a Health Center," by Dr. Alfred Cummings Reed, San Francisco; March 5: "The Problem of the Drug Addict," by Dr. Robert Eugene Bering, San Francisco, and March 19: "The Health Age," by Mr. Celestine Sullivan.

ILLINOIS

Personal.—Dr. Boleslaus Klarkowski, member of the Chicago Board of Education, sustained serious burns of the eye by explosion of chemicals, December 22.——Dr. John A. Wheeler, Springfield, formerly sheriff of Sangamon County, has been appointed medical director of the juvenile court.

Illegal Practitioner Again Fined.—J. P. Vizgird, St. Louis, has again been fined $200 and costs by the Department of Registration and Education for practicing medicine in Illinois without a license. The case had been pending against Vizgird in the St. Clair (Ill.) County Court for several months. Following the formal disposition of this case, five more informations were filed against Vizgird for violating the Medical Practice Act and he was compelled to give bond before he was permitted to return to St. Louis. Vizgird paid his fine and promised never to practice medicine in Illinois again so the remaining charges were dismissed. He had been fined for a similar offense in June, 1918.

Venereal Diseases in Illinois.—The division of social hygiene, state department of public health, has recently issued a report of known cases of venereal diseases in Illinois for the year ending June 30, 1919. The total number of cases reported is 11,915 with about 5,000 additional cases treated in the several clinics conducted by the state. There were 7,756 cases reported among males with 502 cases of syphilis, 5,752 cases of gonorrhea and 474 cases of chancroid. Total number of women infected was 4,159 of whom 1,808 were victims of syphilis, 2,342 were suffering from gonorrhea and nine from chancroid. Six hundred and fifty-six of these victims of venereal disease were employed in the handling of foodstuffs.

Chicago

The Quine Dinner.—A dinner was given to Dr. William E. Quine, December 27, in celebration of his completion of half a century in the practice of medicine. More than 300 of Dr. Quine's friends were present to do him honor. Dr. Frank Billings was toastmaster; Dr. David Kinley, dean of the University of Illinois, Urbana, spoke on "The Doctor and the Community"; Dr. Daniel A. K. Steele, on Dr. Quine as "The Colleague"; Mr. John T. Richards, on Dr. Quine as "The Man," and Dr. James B. Herrick, on Dr. Quine as "The Physician." Dr. William A. Pusey presented Dr. Quine with a book containing the autographs of those present at the dinner.

INDIANA

Personal.—Dr. Varney Hazlewood, Bedford, has been appointed head physician of the Indiana State Sanatorium, Rockville.

Smallpox at Evansville.—The Evansville Board of Health reported, December 4, that there were eighty cases of smallpox in the city, three fourths of the number being children.

Judgment Awarded Physician.—Dr. William F. Walsh, Indianapolis, was awarded a judgment of $4,000 against Patrick, Edward and Dennis Bryan, whom he charged with malicious prosecution.

Parking Privileges Extended.—Mayor Jewett of Indianapolis has signed an amendment to the traffic ordinance, extending to three hours the limit for parking in the congested districts for physicians who have downtown offices.

Illegal Practice Charged.—The State Board of Medical Registration and Examination filed affidavits, December 5, against B. C. Hendricks, a chiropractor of Kendallville, and A. J. Newman, Gary, who are alleged to be practicing medicine without a state license.

Society Reorganized.—Marshall County Medical Society has been reorganized and the following officers have been elected: president, Dr. Frank H. Kelly, Argos; vice president, Dr. Howard P. Preston, Plymouth, and secretary-treasurer, Dr. Harry Knott, Plymouth.

Anderson Clinic Organized.—The Anderson Clinic has been incorporated by Drs. Lee F. Hunt, Thomas M. Jones, Albert W. Collins, Weir M. Miley, George A. Whitledge, Henry W. Gante, S. G. McDonald, and Earl E. Brock. The clinic will be housed in a two-story brick building at Jackson and Twelfth streets, and will have clinical and pathologic laboratories, roentgen ray and all other necessary equipment. The clinic is incorporated for $75,000

Osteopath Sues Physicians.—A suit for $50,000 damages for an alleged conspiracy to prevent him from practicing surgery in any of the hospitals of Fort Wayne, has been instituted by Kent L. Seaman, an osteopath, against Drs. Henry O. Bruggeman, Miles F. Porter, Ralph M. Bolman, Ben P. Weaver, Lyman T. Rawles, Edgar N. Mendenhall, John E. McArdle, L. Parker Drayer, Albert E. Bulson, Maurice I. Rosenthal, Homer E. Glock, all of Fort Wayne, and the Poor Handmaids of Jesus Christ, a corporation. An injunction is brought against all the defendants to restrain them from hindering him from the practice of surgery in St. Joseph's Hospital or elsewhere.

IOWA

Tuberculosis Hospital for Polk County.—Announcement is made that Polk County will have a $100,000 tuberculosis hospital as soon as a suitable location is found.

Inebriate Hospital Closed.—The State Inebriate Hospital, Knoxville, was closed, December 1, on account of lack of patronage. At the time of closure only eleven patients were under treatment.

Personal.—David S. Fairchild, Jr., Col., M. C., U. S. Army, Clinton, chief surgeon of the Forty-Second Division, has been honorably discharged from the United States service.——Dr. Williams Cammack and Libby Seymour Cammack, formerly of Fort Dodge, have returned after twelve years' service as medical missionaries in Angola, Portuguese West Africa.

Laboratory Opened.—The Physicians' Club of Keokuk celebrated the formal opening of the Keokuk Clinical and Pathological Laboratory, December 2. The laboratory is operated by the state board of health, and Dr. Sarah R. Kellman is director. The physicians of the surrounding country were invited to a banquet which was followed by addresses by Dr. Henry Albert, Iowa City, who spoke on the laboratory from the standpoint of the laboratory man, and Dr. William H. Rendelman, Davenport, who discussed the value of the laboratory from the standpoint of the clinician.

Hospital Items.—St. Luke's Hospital, Davenport, was opened, October 15.——The United Lutheran Church Hospital has purchased the old Oaks Hotel, Clear Lake, and

will remodel the building for a hospital at an estimated cost of $300,000.——Cedar Valley Hospital, Charles City, has resumed operation.——Sisters Hospital, at Grinnell, has been turned over by the contractors, and will soon be opened formally.——The Eleanor Moore Hospital, Boone, has been taken over by Boone County.——The cornerstone of the new main building of St. Thomas Emergency Hospital, Marshalltown, was laid recently with impressive ceremonies.

MASSACHUSETTS

King Thanks Harvard Unit.—King George V of England, in a communication received by Harvard University, expresses his personal appreciation of the service contributed by the Harvard Unit during its three years and a half of duty with the British Forces in France.

Floating Hospital Opens Shore Work.—The new on-shore department of the Boston Floating Hospital, which will care for babies during the winter, and specialize in research study, has been opened at 40 Wigglesworth Street, Boston, where three three-story houses rented from Harvard University have been renovated at a cost of about $40,000.

Personal.—Dr. Ernest William Goodpasture, Boston, has been appointed assistant professor of pathology in Harvard University Medical School.——Dr. John H. Wyman, Medway, has been appointed associate medical examiner (coroner) for the Norfolk District.——Dr. Isidor D. Bronfin, superintendent and medical director of the Beth Israel Hospital, Roxbury, Boston, has resigned.——Dr. Robert B. Scales, Dorchester, Boston, has been commissioned lieutenant-colonel, M. R. C., U. S. Army.——Dr. Edward H. Bradford, Boston, has been reappointed president of the Massachusetts Hospital School.——Dr. Ernest B. Emerson, superintendent of the Brockton Hospital, has resigned and has returned to his former post as superintendent of the Rutland State Sanatorium.——Dr. Henry P. Walcott, chairman of the metropolitan water and sewerage board, Boston, has been retired after more than forty years in the service of the commonwealth of Massachusetts.——Dr. Thomas F. Joyce has been appointed superintendent of the Lawrence Municipal Hospital.

MICHIGAN

Club Election.—Charlotte Medical Club has elected Dr. Vinton J. Rickerd, president, Dr. Flavius J. Knight, vice president, and Dr. Stanley A. Stealy secretary-treasurer.

Fritch Sentenced.—A jury in Detroit is reported to have found Dr. George A. Fritch guilty of manslaughter, and he was sentenced, October 28, to serve from one to fifteen years in the state branch prison, Marquette, and was taken there to begin his sentence December 9.

Fires in Hospitals.—Fire destroyed Mercy Hospital, Big Rapids, December 1, with the loss estimated at $100,000. Forty patients were removed, and it is reported that one individual lost his life.——Reid City Hospital burned, November 18, with a loss of $5,000. The patients were removed without casualty.

Personal.—Dr. Griffith A. Thomas, Detroit, who resigned as police surgeon to enter the army in 1917, has returned to Detroit and resumed his work at police headquarters.——Dr. Eugene Miller, health officer of Battle Creek, has been elected director of the Michigan State Health Association.——Dr. Alvin H. Rockwell, Kalamazoo, has been elected president of the Michigan State Health Association.

Clinics for Practitioners.—The staff of the University Hospital, Ann Arbor, announces a series of medical, surgical and special clinics to be given on the afternoon and evening of the second Wednesday of every month and the morning of the following day. These clinics are intended to help practitioners to keep abreast of new and interesting developments. Difficult cases will be demonstrated and discussed. An added feature will be a clinicopathologic conference on cases coming to necropsy. The plan has been arranged to enable practitioners to see the maximum amount of clinical material with the least expenditure of time, and to carry out the policy of the hospital to put its teaching facilities at the service of the profession. Conferences will be held in the surgical amphitheater of the University Hospital unless otherwise stated. The schedule has been arranged with the view of allowing practitioners to make the best train connections in reaching and leaving Ann Arbor. The exercises will start at 1:30 p. m., 7:30 p. m. and 8:30 a. m. The first conference will be held, Jan. 14 and 15, 1920.

NEW JERSEY

Personal.—Dr. Wilfred M. Post, Princeton, has returned from Asia Minor, where he served with the Near Egypt Relief.——Dr. John Cook, Bayonne, has been appointed a member of the staff of the Dyersburg (Tenn.) General Hospital.

Banquet to Service Men.—Mercer County Medical Society gave a banquet, November 12, at Trenton, to thirty-one physicians of Mercer County who were in the United States service during the world war. Dr. Irvine F. P. Turner, Toronto, president of the society, officiated as toastmaster.

New Officers.—The nineteenth annual meeting of the Tri-County Medical Association of Morris, Sussex and Warren was held at Hackettstown, October 14, and the following officers were elected: president, Dr. Frederick P. Wilbur, Franklin; vice presidents, Drs. Henry W. Kice, Wharton, and Louis C. Osmun, Hackettstown; secretary, Dr. Charles B. Smith, Washington, and treasurer, Dr. Frederick W. Flagge, Rockaway.

Infant Mortality Rate.—During the first nine months of 1919, the infant mortality rate for Newark was 80.6 per thousand, as against 87.8 for the same period in 1918. This is held to be a very low rate, among the lowest in the country, and is especially noteworthy because Newark presents all the conditions that are held to make difficult a very low infant mortality rate, such as congestion, industrial community, milk supply coming from great distances, large foreign population, and a large percentage of births attended by midwives.

Mental Hygiene.—A new work has been introduced in the Bureau of Mental Hygiene, Mental Hygiene Social Service. A psychiatric social worker has been appointed to carry on the work. The objects are to aid the promotion of mental hygiene; to give assistance to the mentally maladjusted; to maintain psychiatric clinics, and to inform the public as to the cause and means of prevention of mental diseases and deficiencies. In the first month of its existence, forty-two cases were referred to this bureau by various organizations, charities and private individuals.

NEW YORK

Tuberculosis Survey.—The recent survey of Schenectady County shows that of 120 individuals examined, 17, or 14 per cent., were found positive, and 35, or 29 per cent., suspicious.

Laboratory for Montgomery County.—At a recent meeting of the board of supervisors of Montgomery County, it was voted to appropriate $5,000 for the establishment of a county laboratory at Amsterdam.

Water Purification for Tonawanda.—The town of Tonawanda has voted to issue $200,000 in bonds for a water purification works. The town has just recovered from an epidemic of typhoid fever, which was demonstrated to have been water borne.

Personal.—Dr. Thomas B Carpenter, Buffalo, for many years first assistant bacteriologist of the laboratories of the department of health of Buffalo, has been appointed director of laboratories, succeeding Dr William G. Bissell, deceased. ——Dr. Grace M. Norris, Utica, has been elected coroner of Oneida County.

Want Reformatory Reopened.—An appeal has been made to John D. Rockefeller, Jr., to reopen the buildings which he established at a cost of $500,000 near the Bedford Reformatory for Women, as a psychopathic hospital and institute for the study of social and mental hygiene, in connection with the work of the Bedford Reformatory. At the time Mr. Rockefeller erected the buildings he gave the state the privilege of buying them, but, as no action was taken, the buildings were closed.

New Officers.—The Albany County Medical Association, December 12: president, Dr. James N. Vander Veer; vice president, Dr. George W. Papen, Jr., secretary, Dr. Percival W. Harrig, and treasurer, Dr. Nelson K. Fromm, all of Albany.——Rensselaer County Medical Society, in Troy, December 9: president, Dr. Christopher J. Patterson (reelected); vice president, Dr. William J. Fleming; secretary, Dr. William Kirk, Jr., and treasurer, Dr. Russell F. Benson, all of Troy.——Onondaga County Medical Society at Syracuse, December 9: president, Dr. Harry J. Brayton; vice president, Dr. Robert Burns; secretary, Dr. George S. Reed, and treasurer, Dr. George M. Retan, all of Syracuse.

Clinics Combined.—The State Hospital Commission, which for some years, has been conducting clinics successfully

throughout the state in order to provide communities with facilities for the examination of cases of nervous and mental disorder, and the commission for mental defectives have evolved a program for a system of state-wide clinics. It is believed that better service can be rendered by combining the clinics for mental defectives with those for nervous and mental diseases. The first of these combined clinics was opened recently at Watertown, through the cooperation of Dr. William C. Sandy, New York City, and Dr. Paul G. Taddiken, Ogdensburg. It has been further suggested that these clinics could well be coordinated with the proposed system of health centers which the department of health desired to establish throughout the state.

Aid for Industrial Cripples.—The committee on education of the state reconstruction commission recently held a conference for the purpose of discussing plans for dealing with the problem of industrial cripples. According to statistics obtained by the commission, industrial casualties in the United States every year equal or exceed in number the country's total of wounded during the war. The questions particularly discussed were whether special schools and employment bureaus for industrial cripples were to be started and whether retraining and reeducation should be made compulsory. It was decided to urge the state immediately to inaugurate a policy of caring for men and women who are crippled through industrial accident or otherwise. A committee was appointed to draft proposals for the consideration of the legislature and to map out a program of rehabilitation. This is to be carried through irrespective of the federal bill now pending, in which $1,000,000 is appropriated for the work, to be matched dollar for dollar by the several states

New York City

Personal.—Dr. Abraham Strachstein has been appointed an instructor in urology in Columbia University.

Harvey Society Lectures.—The fifth lecture of the Harvey Society series will be delivered by Dr. Homer F. Swift, New York City, of the Rockefeller Institute, at the New York Academy of Medicine, January 10, on "Trench Fever."

New Hospital for Jamaica.—The trustees of the Jamaica Hospital, Queens, have planned to erect a new hospital building at a cost of $250,000 on a plot of ground 200 feet square extending along Ridgewood and Lester avenues, Jamaica.

Fund for Visiting Nurses.—The Brooklyn Visiting Nurses' Association has adopted resolutions authorizing the raising of $250,000 for work in that borough. A fund of $25,000 to endow a visting nurse in memory of Miss Elizabeth Hedin, who died during the influenza epidemic as a result of her devotion to cases under her care, will be a part of the campaign.

Division of Lectures Established.—The bureau of public health education of the department of health has instituted a division of lectures which is prepared to fill requests for lectures on any health subject, and especially on venereal disease. Societies or organizations desiring lectures may secure an appointment by communicating with Christine Kefauver, supervisor of lectures, bureau of public health education, 505 Pearl Street, Manhattan.

Health Department Sells Milk.—The health department has begun the sale of Grade B milk at 15 cents a quart at nine of its baby health stations. If the scheme is successful it will be extended to the entire sixty milk stations conducted by the health department. This is the grade of milk ordinarily retailing at 17 and 18 cents a quart. In this way Dr. Royal S. Copeland is endeavoring to develop a healthy competition which will eventually result in lower prices of milk delivered to consumers.

Cardiac Classes for Schoolchildren.—The cardiac class, conducted for the past two years by the Educational Alliance at East Broadway and Jefferson Street, has been so successful that three others have been started in Manhattan and one in Brooklyn. The results have been so gratifying that an appeal has been made to the board of education to provide special classes for children suffering from cardiac conditions. Beth Israel Hospital has been assisting at these cardiac classes with its social service department.

New Officers.—At the ninety-ninth annual meeting of the Medical Society of Kings County, December 16, Dr. John A. Lee was elected president; Dr. Arthur H. Bogart, vice president; Dr. Charles E. Schofield, secretary (reelected), and Dr. Robert L. Moorhead, treasurer, all of Brooklyn.——At the annual meeting of the Queens-Nassau County Medical Society at Jamaica, L. I., December 9, the following officers were elected: president, Dr. Arthur D. Jaques, Lynbrook; vice president, Dr. Thomas C. Chalmers, Forest Hills, and secretary-treasurer, Dr. James S. Cooley, Mineola.

OHIO

Personal.—Dr. Willard J. Stone, formerly of Toledo, has moved to Pasadena, Calif.

New Academy Officers.—At the annual meeting of the Dayton Academy of Medicine, December 12, Dr. Lynn M. Jones was elected president; Dr. Matthew Porter, vice president, and Dr. Edmund E. Bohlender, treasurer.

Academy to Issue Journal.—A new monthly medical journal to be called the *Academy Journal* is to be issued by the Cincinnati Academy of Medicine. Dr. Charles L. Bonifield is chairman of the committee to carry out this project.

Officers Elected.—The following officers of the Cleveland Medical Library Association were elected to serve during 1920: president, Dr. John P. Sawyer; vice president, Dr. Arnold Peskind; secretary, Dr. George E. Follansbee; treasurer, Dr. Clyde L. Cummer, and directing librarian, Dr. Carl A. Hamann.

Prizes to Nurses.—At the last meeting of the Medical Board of the Jewish Hospital, Cincinnati, it was announced that an anonymous donor had arranged to give prizes of $60 each to the two highest ranking nurses in the first and second years of the training school, and prizes of $120 each to the two highest ranking nurses among the graduating nurses of the institution.

Clinic Opened.—The Canton City Clinic was formally presented to the city by the Canton Chapter of the American Red Cross, December 11, and was accepted for the Canton Medical Society and the people of Canton by Dr. Austin C. Brant. The clinic is intended to be a stepping stone for a public or free city hospital. Dr. Harry P. Pomerene has been elected president, Dr. Charles A. Crane vice president, and Dr. Loyal E. Leavenworth secretary, all of Canton.

Prizes Awarded.—The Cleveland Medical Library Association awarded as prizes, to Cleveland physicians, the income from a fund established by Dr. Hamilton Fisk Biggar as follows: $250 to Dr. Roy Gentry Pearce, for an essay on "Cardiorespiratory Mechanism in Health and Disease"; $250 to Dr. Roy Wesley Scoti, for an essay on "Studies of Pulmonary Emphysema," and $100 to Dr. Marvin Da C. Shie for an essay on "The Importance and Scope of Modern Industrial Medicine."

PENNSYLVANIA

Increased Space for Sanatorium.—Dr. Edward Martin, Philadelphia, state commissioner of health, purchased, December 9, for $20,000, the White Pine Inn and other property adjacent to the Mont Alto Sanatorium.

New Contagious Disease Hospital.—Bower Hill, near Woodville, Allegheny County, has been tentatively decided on as the site for a proposed new contagious disease hospital, to be erected under the direction of the county commissioners. A plan has been presented providing for a ninety-six room institution to cost about $240,000.

Personal.—Dr. Stephen E. Tracy has been elected medical director of the Stetson Hospital, Philadelphia, succeeding Dr. Lewis S. Somers, resigned.——Dr. Robert B. Mackey, Clark's Summit, has been commissioned major, M. C., Pennsylvania National Guard, and assigned to duty with the Thirteenth Infantry.——Dr. John Murphy, Loretto, was given a testimonial, December 24, by the people of Loretto, in recognition of his services to the community for nearly forty years, and especially during the influenza epidemic of last year.——Dr. Charles C. Cooner, Kulpmont, has been appointed deputy coroner of Northumberland County.

WASHINGTON

Personal.—Joseph A. McKee, Lieut.-Col., M. C., U. S. Army, has returned to Seattle, after an absence of three and one-half years, abroad.——Dr. Frank P. C. Davis has been appointed city health officer of Kelso, succeeding Dr. Jeremiah Ballard.

New Hospital Building Plan.—The announcement is made that the Sisters of St. Joseph of Peace who have conducted the Wenatchee General Hospital for the last three years will immediately commence the erection of a $75,000 hospital on a 3-acre site at the edge of the town.

WEST VIRGINIA

Clinical Conference.—The Ohio Valley General Hospital, Wheeling, announces that its attending staff holds clinical conferences twice a month, at the hospital, at which other physicians are invited to be present.

Staff Named.—Dr. Hugh H. Carr, Fairmont, has been named chief of the surgical staff of the Cook Hospital, and Dr. Edward W. F. Howard, Fairmont, chief of the medical staff of the institution, by the Marion County Medical Society.

Society Meetings.—The Eastern Panhandle Medical Society met at Charleston, December 10, and elected Dr. H. G. Tomkin, Berkeley County, president, Dr. Briscoe B. Ranson, Harper's Ferry, vice president, and Dr. Joseph M. Miller, Charles Town, censor. The next meeting will be held at Martinsburg.——Harrison County Medical Society at its annual meeting in Clarksburg, December 4, elected Dr. Solomon L. Cherry, Clarksburg, president, Dr. Arthur T. Post vice president, Dr. Irving D. Cole secretary, and Dr. Jesse F. Williams, treasurer.

WISCONSIN

Dispensary Opened.—The new Milwaukee Dispensary, on the third floor of the Saxe Building, has been opened under the charge of Dr. A. Harry Cohn.

Radium Association Incorporated.—The Physician's Radium Association has been incorporated at Milwaukee, with a capital stock of $20,000, by fourteen physicians of Milwaukee.

Hospital Items.—A movement was recently started which promises to provide a modernly equipped hospital for Ripon. ——Announcement has been made that the erection of a $50,000 hospital at Stanley has been definitely planned.

Personal.—Dr. Francis W. Starr, Stanley, is said to have been fined $25 for having broken the rule of the state board of health regarding public funerals over remains of persons having contagious diseases.——Dr. Augustus L. Beier, Chippewa Falls, has been appointed to succeed Dr. Alfred W. Wilmarth as superintendent of the State Home for Feebleminded, Chippewa Falls.

New Officers.—At the annual meeting of the Milwaukee County Medical Society, December 11, Dr. Frank C. Studley was elected president; Dr. Clarence A. Baer vice president; Dr. Daniel Hopkins, secretary, and Dr. Arthur R. F. Grob, treasurer.——Waukesha County Medical Society at its annual meeting held in Waukesha, December 4, elected Dr. Floyd W. Aplin, Waukesha, president; Dr. George H. Perrin, Menomonee Falls, vice president, and Dr. S. Breck Ackley, Oconomowoc, secretary-treasurer.——At the sixteenth annual meeting of the West Wisconsin District Medical Society held in Eau Claire, November 23, Dr. Johan B. Mathiesen, Eau Claire, was elected president, and Dr. Herman F. Derge, Eau Claire, secretary.

CANADA

New President of McGill.—Sir Auckland C. Geddes, M. P., Montreal, who served during the war as Minister of National Service and Reconstruction, and president of the Local Government Board, formerly professor of anatomy at the Royal College of Surgeons, Ireland, and later professor of anatomy in McGill University, has been elected principal of the latter institution.

GENERAL

Tristate Physicians to Meet.—The annual meeting of the Tristate Medical Society of Virginia and the Carolinas will be held in Charlotte, N. C., February 18, under the presidency of Dr. Robert C. Bryan, Richmond, Va.

More Gifts by Rockefeller.—Of the $100,000,000 Christmas gift of John D. Rockefeller, one half was given to the Rockefeller Foundation, and of this sum, $5,000,000 is to be expended to the development and improvement of the leading medical schools in Canada, these schools being required to raise additional sums from other sources.

Congress on Internal Medicine.—The American Congress on Internal Medicine will meet in conjunction with the American College of Physicians in Chicago, February 23 to 28. The sessions will include daily clinics and laboratory demonstrations in hospitals and teaching institutions, and evening meetings, one of which will embrace the fourth annual convention of the American Congress of Internal Medicine.

Deaths from Wood Alcohol.—As a result of the use of substitutes for liquor containing methyl alcohol since prohibition became effective, 255 deaths have been reported in the United States, and of these about 140 followed Christmas celebrations. Of these deaths thirteen have thus far been reported in Chicago alone, and in New York there are said to be at least 100 cases of blindness following the use of wood alcohol.

Tristate Physicians Meet.—The Tristate Medical Society of Louisiana, Arkansas and Texas held its fifteenth annual meeting at Marshall, Texas, under the presidency of Dr. Edwin L. Beck, Texarkana, and elected the following officers: president, Dr. Charles R. Hargrove, Marshall; vice presidents, Drs. Lucian H. Lanier, Texarkana, Texas, Henry W. Jarrell, Mansfield, La., and Joe Becton, Greenville, Texas, and secretary, Dr. Frank H. Walke, Shreveport, La.

Ship Named for Red Cross.—The *Amcross*, a cargo vessel of 9,000 deadweight tons, was launched in the yards of the Merchant Ship Building Company, Chester, Pa. Amcross, which is the cable-code word for the American Red Cross, was selected as the name of the new ship as a compliment to the war work of the Red Cross. Miss Margaret Farrand, daughter of Dr. Livingston Farrand, chairman central committee, American Red Cross, was sponsor for the vessel.

Southern Surgeons Meet.—At the annual meeting of the Southern Surgical Association held in New Orleans, December 16 to 18, the following officers were elected: president, Dr. Williard Bartlett, St. Louis; vice presidents, Drs. C. Jeff Miller, New Orleans, and Edward G. Jones, Atlanta, Ga.; secretary, Dr. Hubert A. Royster, Raleigh, N. C. (reelected), and treasurer, Dr. Guy L. Hunner, Baltimore (reelected). Hot Springs, Va., was chosen as the place of meeting for 1920.

The Seessel Fellowships.—Yale University announces the two Theresa Seessel Research Fellowships to promote original research in biologic studies. These fellowships yield an income of $1,000 each, and are open to men or women. Preference is given to candidates who have already obtained their doctorate, and have demonstrated, by their work, their fitness to carry on successfully original research of a high order. The holder must reside in New Haven during the college year from October to June. Application should be made to the dean of Yale University, before May 1, and should be accompanied by reprints of scientific publications, letters of recommendation and a statement of the particular problems which the candidate expects to investigate.

Child Surveys.—Special investigations made by the children's bureau of the U. S. Department of Labor in three American cities show how babies have suffered as a result of the advance in the price of milk. In Baltimore, of the 728 children between 2 and 7 years of age, only 29 per cent. are now having fresh milk to drink as against 60 per cent. a year ago; in Washington, half of those between 2 and 7 years of age, who were visited by the public health nurses were receiving no fresh milk to drink; and in New Orleans conditions were even worse. Studies of the type recommended by the chief of the children's bureau would seek to determine all a child's needs. They would be based on actual living conditions in various types of communities; and would accordingly have a practical and not merely a theoretical value. Through them mothers would obtain an authoritative statement concerning the basic needs of growing children, and communities would be given an insight into the way in which those needs may be supplied.

Bequests and Donations.—The following bequests and donations have recently been announced:

To establish and maintain a nurses' home and training school in connection with the Goshen, Ind., Hospital a bequest of $65,000, by the will of Mrs. Laura A. Kindig, Goshen.

Washington University Medical School, St. Louis, $300,000 to endow a department of pharmacology. Of this amount, one half was given by the General Education Board and the other half was raised by the medical school.

New York Post Graduate Medical School and Hospital, New York City, $25,000, by the will of Frederick Meade.

Presbyterian Hospital, New York City, the residuary estate valued at $500,000, at the death of his two sisters, by the will of Charles G. Thompson.

Grant Hospital, Chicago, a donation of $50,000 toward the endowment fund; $25,000 remitted from the Christmas sale at the Parkway Hotel, and an addition to the present nursery to accommodate twenty more beds, by Mrs. William C. Seipp.

Michigan Hospital and School for Crippled Children, $1,100,000; for a new nurses' home, $650,000; Children's Free Hospital, Detroit, $125,000, and St. Vncent's Orphan Asylum, Detroit, $75,000, a Christmas gift from Mayor James Couzens of Detroit.

FOREIGN

Deaths in the Profession Abroad.—Dr. **E. J. Pontoppidan,** professor of skin and venereal diseases at the University of Copenhagen and member of Danish, Swedish, Argentine and Italian dermatologic societies, elected at Rome in 1912 to preside at the Eighth International Dermatology Congress; surgeon in chief of the Rudolph Berghs Hospital; aged 72. ——Dr. **Raphaël Lépine** of Lyons and Dr. **C. Ladame,** professor of psychiatry at the University of Geneva.

Semicentennial of Sainte-Beuve.—It is just fifty years since the death of Sainte-Beuve whose "Monday essays" in the Paris dailies are said to have been events of European importance. As our French exchanges are recalling, he was a physician before he turned to literature, and his training in psychology and biology helped to make him, as he was called, the world's greatest literary critic. It was Sainte-Beuve who said when some one remarked that charlatanism was everywhere, "Yes, in politics, in the art of governing mankind that is perhaps true. But in science, in art, the glory, the eternal honor is that charlatanism shall find no entrance; herein lies the inviolableness of that noble portion of man's being."

The Flemish Congress of Physicians and Naturalists.—The Amsterdam section of this Flemish association recently gathered at Antwerp for its first meeting since the beginning of the war. About thirty members were present, and Professor De Bruyne presided. Prof. F. Daels delivered an illustrated address on clinical cures of cancer. The members voted unanimously—four refraining from voting—to drop twenty-four members from the membership of the general association on account of pro-German "activism." The *Nederlandsch Tijdschrift* states that the assembly discussed the foundation of a Flemish medical journal, in connection with publishing the transactions of the congress, but no decision was reached.

Citations for Bravery.—The *Presse Médicale,* November 29, gives a long list of official citations of French medical officers for exceptionally devoted services during the war, and two American names are included in the list. The first is Dr. Lester Pratt, medical officer in the Fifth Regiment of Marines. He is stated to have had charge of an advanced station in Belleau Wood, June 11, 1918. "His post being exposed to a violent bombardment, he displayed remarkable self possession and devotion to duty." The other is Dr. Richard Shea, also a medical officer of the Fifth Regiment of Marines. "During the attack of Belleau Wood, he displayed extraordinary heroism, tending the wounded during a violent bombardment, June 11, 1918." The official notice of the citations in the French records is dated Oct. 15, 1919.

Tuberculosis and Housing.—The medical officer of health for the city of Edinburgh claims that statistics have clearly proved the close relationship which exists between tuberculosis and overcrowding. Out of 263 cases of tuberculosis notified in Scotland in 1914 and 1915, no less than 159 came from houses of one, two and three apartments. The old country cottages of Scotland are badly situated and very damp. Thorough ventilation is impossible, and, indeed, there is often scarcely any ventilation at all, the windows being so fixed that only one small pane can be opened. The situation is not very much better in England. Of the tuberculous persons visited in Somerset between 1913 and 1918 more than 40 per cent. were found to be sharing their bedrooms with other persons, and in less than 10 per cent. of all cases was it found possible to remedy this state of affairs at a later date.

Inaugural Exercises of the French University of Strasbourg.—A most imposing ceremony, historical pageant and general tribute ushered in the opening exercises of the University of Strasbourg under French rule November 21. The president of the republic and the three marshals of France took part in the festivities, as also delegates from many other universities in France and abroad. The dean of the university is Professor Weiss of the chair of biology. Other well known names on the medical faculty are Ambard (physiology), Duverger (ophthalmology), Forster (obstetrics), Masson (pathologic anatomy), L. Blum and Bard (clinical medicine), Chavigny (forensic medicine), Nicloux (biologic chemistry), Stolz and Sencert (surgery), and Pautrier (skin and venereal diseases). The French Académie de Médecine was represented by Professors Delorme, Netter and Schwartz.

LATIN AMERICA

No Examination Required for Uruguayans with Foreign Degrees.—The *Anales de la Facultad de Medicina* gives the text of the law recently enacted which abrogates the requirements hitherto prevailing in regard to reexamination on returning to practice in Uruguay after obtaining degrees in foreign countries from institutions that grade to correspond with the Uruguayan faculties.

Deaths in the Profession.—Dr. **J. Lemos,** a prominent bacteriologist and clinician of Mendoza, Argentina, chief of the local Asistencia Publica and of the Pasteur Institute. His antiserums and vaccines have been widely used.——Dr. **L. J. Velarde,** the veteran of the Argentine naval medical service in which he occupied various high posts, displaying great initiative and executive ability.——Dr. **A. J. Drago,** medical expert for the courts in Argentina and director in the Obras Sanitarias of the nation, aged 58.——Dr. **Luis Manzone,** a physician of San Isidro, Argentina, succumbed to pneumonia, November 3, aged about 60.——Dr. **F. de Paula Valladares,** professor of clinical surgery in the University of Rio de Janeiro, and head of a private surgical clinic, aged 67.——Dr. **Ernesto Samit** of Santiago, Chile, succumbed to typhus while combating the recent epidemic there. The obituary notices of him mention also the deaths in the prevailing epidemic of three other young physicians, two medical students, nine trained nurses and numbers of the personnel of the different hospitals.

Sexual Enlightenment.—The *Semana Médica* states that great interest has been aroused in the work of the Federación Abolicionista Internacional by the Argentine-Uruguay committee. This committee is organizing an extensive conference at Montevideo to discuss sexual hygiene and venereal prophylaxis. Dr. R. E. Baethgen will open the discussion on sexual enlightenment of the young; addresses will be given also by Dr. Paulina Luisi, secretary-general of the Argentine-Uruguay committee and school medical inspector, and by Sr. J. A. Seniliosa. The closing address will be by Dr. José Brito Foresti, president of the committee, professor of syphilography at the University of Montevideo.

Uruguay Remits Import Duties on Drugs for Treatment of Syphilis.—The *Boletin del Consejo Nacional de Higiene,* published at Montevideo, gives the discussion in the senate and the text of the law signed by the president, October 1, which remits all duties on the importation of the specific products which the Consejo Nacional de Higiene regards as efficacious in combating syphilis. The Asistencia Pública Nacional is authorized by the law to purchase the necessary quantity of drugs and to sell them at cost price to physicians and pharmacists on demand. Reserve supplies of not less than 10,000 doses are also to be kept on hand. The Consejo Nacional de Higiene is to fix the price for sale to the public; this price must not be more than 10 per cent. above the cost price.

The Conference on Tuberculosis at Rosario, Argentina.—A large gathering of persons especially interested in the campaign against tuberculosis was held recently at Rosario, and the important resolutions adopted are reproduced in a number of our South American exchanges and have been sent to us by the secretary general. A general outline for the whole work was drawn up, advocating a preventorium for each 100,000 inhabitants at least, with simple inexpensive sanatoriums for the curable tuberculous; enforcement of hygiene for foods, vehicles, etc.; better housing facilities, with penalties for owners of insanitary dwellings; enlightenment of the public, and the compulsory declaration of tuberculosis. The conference suggested that part of the income from the lottery be devoted to the prophylaxis of tuberculosis. One resolution urged that a commission of experts should be appointed to have exclusive charge of the whole system of antituberculosis prophylaxis and coordinate all efforts, with ample means at its disposal. Larroque's proposal for insurance against tuberculosis was adopted also, the expense to be borne by both workingman and employer, and special preventoriums to be organized by the insurance societies. Another resolution urged that the state should interfere to enable workingmen to buy materials cheaply for home building. Other resolutions voted that vacation or colony schools should form an integral part of the public school system; that a premarriage certificate of freedom from serious disease should be enforced; that illiterate, new recruits should be taught to read, and that the army and navy should inaugurate a section for anthropometry. Other resolutions specified various desirable hygienic regulations.

Government Services

Appointment to Relief Commission

Walter P. Davenport, Major, M. C., U. S. Army, on duty with the American Committee for Relief of the Far East, Caucasus Branch, Tiflis, has been appointed medical advisor to the Interallied High Commissioner for the Caucasus. The commission is doing food and medical relief work in Armenia, Georgia and Azerbaijan.

Hospital Discontinued

Army General Hospital No. 7, Roland Park, Md., has been discontinued as a separate institution and will be maintained and administered as an annex from Subdivision of General Hospital No. 2, Fort McHenry, Md. The federal educational board and American Red Cross will maintain General Hospital No. 7 as a reconstruction school for disabled soldiers.

Army Medical Estimates

In the estimates submitted by the Army and Navy for the fiscal year ending June 30, 1921, about $6,800,000 is asked for the medical department of the Army, including an outlay of $500,000 for commencement of the structure of the army medical center at Walter Reed General Hospital, Takoma Park.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

ALABAMA
Birmingham—Hamilton, G. C. (C.)
Center—Tatum, W. B. (C.)
Henagar—Mason, C. D. (C.)
Springville—Hagood, E. C. (L.)
Talladega—Dixon, D. P. (C.)

CALIFORNIA
Bishop—Doyle, G. P. (C.)
Long Beach—Ross, R. L. (L.)
Los Angeles—Bennett, W. H. (C.)
Blanchar, W. O. (M.)
Seager, H. W. (M.)
Pasadena—Riggin, L. L. (L. C.)
San Bernardino—Owen, C. C. (L.)
San Francisco—Harrington, J. G. (C.)
Stockton—Schermerhorn, L. J. (C.)

CONNECTICUT
New Britain—Faulkner, J. F. (L.)

DISTRICT OF COLUMBIA
Washington—Manning, W. J. (C.)
Sampson, D. G. (C.)

FLORIDA
Jacksonville—Black, H. O. (M.)
Miami—Skaggs, P. T. (L.)

GEORGIA
Chickamauga—Chase, C. L. (L. C.)

IDAHO
Twin Falls—Leigh, C. A. (L.)

ILLINOIS
Aurora—Berkheiser, E. J. (C.)
Chicago—Marcus, S. M. (C.)
Teixler, A. M. (C.)
Van Alyea, O. E. (C.)
Oak Forest—Morris, E. (C.)
Springfield—Beilin, L. M. (L.)

INDIANA
Evansville—Dyer, W. C. (M.)
Indianapolis—Martin, J. A. (M.)
Logansport—Holt, E. K. (L.)

IOWA
Cedar Rapids—Conn, H. R. (C.)
Iowa City—Secoy, H. R. (L.)
Laurens—Nilsson, F. C. (C.)

KANSAS
Morrill—Rushton, J. S. (L.)
Morrowville—Horn, M. H. (L.)
Pittsburg—Nichols, W. J. (C.)
Topeka—Miller, N. D. (L.)

KENTUCKY
Kevil—Aubrey, G. E. (C.)
Louisville—Choate, B. D. (M.)

MARYLAND
Baltimore—Davis, P. L. (C.)
Glenarm—Reier, A. W. (L.)

MASSACHUSETTS
Fort Revere—Pascoe, J. B. (M.)
Fort Rodman—Lowe, T. S. (M.)
Lowell—Johnson, J. B. A. (C.)
Medford—Burrell, H. C. (C.)
North Adams—Curran, A. M. (C.)
Worcester—Deering, G. E. (C.)

MICHIGAN
Franklin—German, F. D. (L.)
Gay—Schmidt, A. W. (L.)

MINNESOTA
Eveleth—Saari, J. A. (C.)
Minneapolis—Darling, W. H. (M.)
Red Wing—Bjerken, F. N. (C.)
Rochester—Ott, W. O. (L.)

MISSISSIPPI
Electric Mills—Champenois, C. (C.)

MISSOURI
Kansas City—Cohen, F. (C.)
Stewart, E. L. (M.)
St. Joseph—Underwood, M. L. (C.)
St. Louis—Altheide, C. H. (C.)
Esselbruegge, F. C. (C.)
Hagler, F. (C.)
Wachenfeld, C. H. (L.)

MONTANA
Bew—Davis, G. H. (L.)

NEVADA
Tonopah—Masterson, J. R. (L.)

NEW HAMPSHIRE
East Andover—Durgin, E. C. (C.)
Manchester—Stickney, H. L. (M.)

NEW JERSEY
Leesburg—Spence, G. S. (L.)

NEW YORK
Brooklyn—Pilzer, H. L. (C.)
Pudney, W. K. (C.)
Reynolds, J. H. (L.)
Camillus—Shaw, G. H. (M.)
Fonda—Glenn, G. M. (L.)
New York—Boyd, L. F. (C.)
Donnelly, J. E. (L. C.)
Fitzgerald, J. J. (L.)
Gardner, F. E. (C.)
Harris, H. C. (L.)
O'Neill, J. C. (L.)
Steele, P. A. (L.)
Zuckerman, S. (L.)
Poughkeepsie—Tighe, L. R. (C.)
Schenectady—Overton, D. W. (C.)
Stottville—West, J. (L.)
Troy—Curtis, S. H. (L.)
Valatie—Dimock, A. R. (C.)
Willard—Rexford, H. I. (L.)

NORTH CAROLINA
Davidson — MacConnell, J. W.. (L. C.)

OHIO
Akron—Drury, R. F. (C.)
Rambo, E. F. (L.)
Cincinnati—Dunham, H. K. (M.)
Sauer, F. J. (L.)
Dayton—George, J. C. (M.)
Salem—John H. J. (C.)
Winchester—Fenton, W. W. (C.)

OKLAHOMA
Broken Bow—McDonald, C. R. (C.)

OREGON
Duffer—Griffith, T. E. (C.)
Junction City—Love, D. P. (L.)
Portland—Wellington, R. H. (C.)

PENNSYLVANIA
Bowmansville—Henderson, R. J. (M.)
Chambersburg—Gans, C. C. (C.)
Philadelphia—Gibbon, J. H. (Col.)
Koenig, C. F. (L.)
Tamaqua—Speer, O. K. (C.)
Washington—Ramsey, G. W. (L.)
Waynesburg—Orndoff, H. E. (C.)

SOUTH CAROLINA
Charleston—Guess, J. D. (L.)

TENNESSEE
Columbia—Pillow, R., Jr. (C.)
Memphis—Granbery, R. (C.)

TEXAS
Commerce—Hyder, C. (C.)
Fort Worth—Powell, E. V. (C.)
Itasca—Robison, D. K. (C.)
Killeen—Ellis, J. W. (L.)
Palacios—Elliott, J. R. (L.)
San Antonio—Harris, W. T. (C.)
Whitesboro—Acton, G. P. (C.)

VERMONT
Pittsford—Hagan, T. J. (M.)
Shelburne—White, W. J. (C.)

VIRGINIA
Hopewell—Evans, R. J., Jr. (C.)
Lynchburg—Deekens, A. H. (L.)
New Castle—Caldwell, B. R. (C.)
Warrenton—Spilman, R. S. (M.)

WASHINGTON
Seattle—Calhoun, A. P. (M.)
Henderson, J. M. (M.)
Wood, C. B. (M.)
Tacoma—Janes, E. W. (C.)
Steele, J. F. (L.)
Turner, J. R., Jr. (L.)

WEST VIRGINIA
Huntington—Dickerson, W. M. (C.)

WISCONSIN
Cambria—Prees, R. L. (L.)
Walworth—Crowe, N. F. (C.)

WYOMING
Gebo—Williams, D. A. (C.)

Foreign Correspondence

LONDON

Dec. 10, 1919.

The Prevention of Venereal Diseases

The National Council for Combating Venereal Diseases has issued a memorandum stating that the prevention of venereal diseases is a large sociomedical problem. In the direct line of attack, ample facilities for treatment and instruction of the public—both social and hygienic—occupy the first place. Concerning the question of personal disinfection after risk is taken, it is no part of the council's policy to conceal the truth, and it has always acknowledged the value of cleansing and disinfecting material, applied early and thoroughly, in diminishing risk. But abstention from exposure is the only certain safeguard. Continence is to be encouraged by every means and on every ground both social and hygienic. As no person who has indulged in promiscuous intercourse can be sure that he is not infected, he is bound in duty to himself and to society to seek means of cleansing at the earliest moment. For this purpose a thorough local application of soap and water is of the greatest value, followed (if possible) by the use of such disinfectants as may be recommended by a physician. While such applications, if properly used, do sensibly reduce the risk of disease, if applied within four hours of exposure, they afford no certain security. They do not in the slightest degree prevent the contraction of syphilis in other parts of the body (as the lips, face or hands) than those disinfected. Satisfactory self-disinfection of women is practically impossible, and skilled medical attention at the earliest possible moment is absolutely necessary. No one should be urged to arm himself in advance with a prophylactic packet.

This advice differs little from that of another organization, formed with the same object though differing somewhat in policy, the Society for the Prevention of Venereal Diseases, which has already been mentioned. This society (which consists mainly of leaders of the profession—Osler, Mott, Arbuthnot Lane, Rolleston and others) is inviting the public to become members at an annual subscription of $5. All who are interested are asked, whether they become members or not, to send a stamped and addressed envelop, whereupon a leaflet giving the necessary instructions will be sent.

Report of Medical Officers of Board of Education

The annual report of the chief medical officer of the board of education, Sir George Newman, just published, is an important document in which future policy is outlined. In a section on "The Beginnings of Disease," Sir George says

that we are profoundly ignorant of this subject, but the school medical service gives an opportunity for examining "the nation in its childhood" and studying the earliest symptoms of disease, the importance of which has been so much insisted on by Sir James Mackenzie. A scheme for investigation of symptoms on a national scale is sketched. Beginning with the antenatal clinic, which the board of education supports in some measure, the work is to be continued through the school for mothers, the infant clinic, the day nursery and the nursery school to the secondary school and finally into the sphere of industrial employment. The observations are to be continuous and handed on from place to place with the child. Coincident with this work, efforts will be made to improve the health and physique of the child "other than by medical treatment. Playgrounds and playing fields, physical culture and games are to be provided and their effects noted.

As to the present condition of schoolchildren: In 1917 the death rate per thousand living was 94 for children under 1 year of age, 29 between the ages of 1 and 2 years, 13 for children aged 2 to 3, 8 for children aged 3 to 4, and 6 for children aged 4 to 5. One of the chief defects noted in "entrants" is malnutrition, expressed either as lack of growth or as rickets and dental defects. From 2 to 3 per cent. of entrants show a serious degree of rickets. Many districts have 60 per cent. of dental caries. Next in importance come infective diseases—measles, whooping cough, tuberculosis and rheumatism. From 50 to 60 per cent. of the entrants have suffered from measles, which leave behind ailments which cause prolonged or permanent disablement. Finally there are catarrhal conditions, which undermine the health and physique of the child and predispose to and create a nidus for various forms of permanent disease. It is these beginnings that must be attacked first by discovery and then by treatment. Both the normal and the abnormal child must be studied. "Why is this child normal? Has it had measles, adenoids, rickets, tuberculosis or rheumatism? If not, why not? If so, how has it overcome these maladies and escaped their sequelae? The answer is of the first importance to the child, to other children, to science, and to the national well-being."

The number of children in average attendance at school during 1917-1918 was 5,194,493. The number medically inspected during the year ending December 31 was 1,317,657. Compared with 1917 there was a great improvement in cleanliness, but the condition of the teeth was not so good. There are now 465 special schools for defective children accommodating 34,478. Defectives are estimated as follows: cripples, 34,500; mentally defective, 30,800; deaf and dumb, 5,500; blind, 4,250. Thus accommodation has not been provided for more than half of the defective.

Australasian Medical Congress for Queensland

The Australian federal authorities have announced that after an interval of six years, the Australasian Medical Congress will meet in Brisbane in August, 1920. At the 1911 congress, held in Sydney, it was decided to recommend the federal government to increase the funds for an Australian institute of tropical medicine, so as to enable an organized inquiry to be made into matters relevant to the permanent settlement of tropical Australia by the white race. The federal government, when approached, made a permanent subsidy for this purpose, with the result that much good work has been done. At the congress next year the principal item for discussion will be the white settlement of tropical Australia. Other matters for consideration are the doctors and lodges' dispute, the control of venereal disease, military surgery, and hygiene, in the light of war experience, and the adjustment of health administration as between the commonweath and the states. All the states and New Zealand will be represented at the congress.

Sir Auckland Geddes' Criticism of the Medical Profession

Sir Auckland Geddes, president of the board of trade, who, it may be remembered, is a qualified physician and was professor of anatomy in McGill University, in an address to the students of Charing Cross Hospital on the occasion of the annual presentation of prizes, delivered some severe criticisms of the profession. It was extraordinarily unequal not only in its technical knowledge but also in its public spirit. The glorious record of the profession in the war was won by a minority. A large number were now sharing in the glory who had done nothing to help. He had taught at a good many medical schools and therefore knew how limited was the outlook of the profession. What was passing for medical education in some schools was really only technical instruction with very little education about it. Men from schools where that type of mind predominated failed to rise to the occasion when the time came. All, whether teachers or students, should get clearly into their minds the difference between technical instruction in the medical schools and the educational side. Because of the state of the educational side for twenty years before the war, we witnessed some of the deplorable exhibitions during the war. There were three great emotions in every human being —the appreciation of beauty, the desire to serve one's generation, and the desire to know the truth. It was in relation to these three great emotions that the medical school was lax. On those sides they saw most in national service (Sir Auckland Geddes was minister of national service in the war), and they had found in the medical service a less satisfactory development than in some others.

As might be expected, this criticism has proved unpalatable to the profession. In a press interview published in the *Daily Chronicle* Dr. Cox, medical secretary of the British Medical Association, said that Sir Auckland Geddes' statement was in conflict with the opinion of men in as good a position to judge the work of medical service. "The medical service has been consistently praised and its work compared with that of other branches of the army." Physicians won 5,227 war decorations. Of these ten were V. C.'s (the most coveted decoration in the British army). More than 11,000 civilian physicians were passed into military service. Dr. Cox shared Sir Auckland's dissatisfaction with medical education, but his remarks did not apply only to it. All education was inferior to what it ought to be.

British Science in the War

At the anniversary dinner of the Royal Society, the president, Sir Joseph J. Thompson, O.M., in replying to the toast of the society, said that there was no country, excepting France, in which men of science threw themselves with such ardor as in this country into making researches which would benefit our troops at the front—certainly not Germany. One remarkable fact that stood out in this war was that every branch of science had its application in the service and defense of this country and was superior to that of our enemies. There had been nothing more conspicuous in the war than the triumph of medicine. They had made up leeway in the war, but it took them five years of suffering and sorrow and loss. That period would have been shortened if the nation before the war had been alive to the part which science must play in any war and had provided departments in which the development of the science of war could have been worked out under more favorable conditions. If they had had such departments, many requirements would have been anticipated.

PARIS

Nov. 27, 1919.

Death of Prof. Raphaël Lépine

French medical circles have suffered a great loss in the person of Professor Lépine, who died at Menton, November 17, in his eightieth year. Raphaël Lépine was born at Lyons in 1840, where he pursued his classical studies. His medical studies were also begun here. After having been intern at the Hôpitaux de Lyon for four years, he came to Paris, where he secured an internship in the Hôpitaux de Paris in 1865. Here he became a pupil of Charcot. In 1867 he studied in Berlin and later (1869) in Leipzig in the laboratory of Ludwig, where he made the interesting discovery of the vasomotor nerves of the tongue. On his return from Germany he entered the service of Brown-Séquard. In 1872 he became clinical chief, and in 1874 physician to the Hôpitaux de Paris. The following year he was appointed agrégé professor on the Paris Faculty of Medicine. Two years later (1877) he secured the chair of clinical medicine at the Lyons Faculty of Medicine. In 1888 Lépine was chosen correspondent of the Academy of Medicine, and in 1896 he was elected *associé national*. He was likewise correspondent of the Academy of Science. Dating from his stay in Paris he had been vice president of the Societé de biologie. In 1905 he was chairman of the Congrès français de médecine. He was repeatedly chosen delegate of the French government at the Congrès internationaux de médecine.

Being at once clinician and physiologist, Professor Lépine constantly pursued parallel clinical and experimental researches. He published numerous works on diabetes, its complications and treatment; on kidney diseases, etc. He was an active collaborator of the *Semaine médicale*, in which

he published many valuable essays on therapeutics, among others, one entitled, "Doit-on traiter la fièvre?" which constituted his report on this subject to the therapeutic section of the thirteenth Congrès international des sciences médicales, held in Paris in 1900.

In collaboration with Bouchard, Charcot and Vulpian, Lépine founded the *Revue mensuelle de médecine et de chirurgie* (1877), which in 1880 was segregated as the *Revue de médecine* and the *Revue de chirurgie*. Lépine remained one of the directors of the *Revue de médecine* up to the time of his death.

Lépine's hospital service and scientific researches did not absorb all his time and attention. He was far from indifferent to the great social problems of his day. He was president of the Lyons chapter of the Ligue des droits de l'homme from its foundation in 1898 until 1903.

Strasbourg University Festival

The reopening of the University of Strasbourg was recently celebrated with great enthusiasm. The president of the republic delivered an important address, in which he alluded to Pasteur, who, at the height of his fame, spoke feelingly of the course in chemistry that he took at the Ecole de pharmacie de Strasbourg and at the Faculté des scienees during the years 1848-1852. The president expressed his approval of the idea of forming a Société des amis de l'Université de Strasbourg, analogous to the Société des amis de l'Université de Paris. The object of such a society will be to aid in the establishment of professorial chairs, a wide range of courses and lectures, and in the more extended equipment of the laboratories and libraries. It is also hoped to found certain prizes to encourage study in certain fields, and to establish scholarships and traveling fellowships.

Concurrently with the celebration of the reopening of the university, the eighth Congrès des étudiants was held in Strasbourg, at which the chief topic of discussion was the devising of ways and means to bring about a betterment in the moral and physical life of students. American, Belgian, Dutch, English, Italian, Norwegian, Polish, Swiss and Czechoslovak delegations were present at the congress.

Personal

Dr. Cunéo, agrégé, has been appointed professor of medico-surgical anatomy on the Paris Faculty of Medicine.

Dr. Pinard, formerly professor of clinical obstetrics on the Paris Faculty of Medicine, who was a candidate at the parliamentary elections, as I mentioned in my letter last week, has been elected a member of the chamber of deputies.

Marriages

HARRY EVANS TRIMBLE, Asst. Surg., U. S. P. H. S., to Miss Agnes Evelyn Malley of St. Paul, at Washington, D. C., December 18.

CHARLES THOMAS MAXWELL, Sioux City, Iowa, to Miss Nelontine Jane Alderson of Russellville, Ky., November 22.

CHARLES HAMILTON HARBAUGH, Philadelphia, to Miss Minnie Anna Moore Hall of Hayfield, Va., December 11.

WILLIAM OSCAR OTT, Rochester, Minn., to Miss Maggie Jane Smith of Lexie, Miss., December 7.

STANLEY ERNEST CRAWFORD, Pittsburgh, to Miss Caledonia Stroud of Franklin, Va., December 6.

LIONEL FRANCIS LORIO, Lakeland, La., to Miss Marie L. Green of Lottie, La, December 4.

FOWLER BURDETTE ROBERTS, Akron, Ohio, to Miss Marie dePaul of Chicago, November 1.

JAY DEVER LINTON to Dr. Nellie Cameron Craig, both of Philadelphia, December 20.

HARRY AUGUST NAUMER to Miss Anna Alvira Risch, both of Brooklyn, December 13.

FRANCIS WELD PEABODY, Boston, to Miss Virginia Chandler of Chicago, December 18.

HYMAN GREEN, Boston, to Miss Leona Freedman of Brookline, Mass., November 11.

JOHN CHARLES MAHR to Mrs. Ollie Dunn, both of Oklahoma City, December 11.

ALBERT JACOB MISHKIND, Denver, to Miss Mollie Ettelson of Chicago, December 17.

Deaths

Sir William Osler, Regius professor of medicine in the University of Oxford, England, whose seventieth birthday was chronicled in THE JOURNAL of July 12, 1919, died at his home in Norham Gardens, Oxford, December 29, from pneumonia.

Dr. Osler was born in Tecumseh, Ont., the son of Rev. F. L. and Ellen Frere Osler. He received his preliminary education in Trinity College School, Trinity College, Toronto, and the Toronto University, and took his medical course in McGill University, Montreal, from which he was graduated in 1872. His graduation thesis on topics in pathologic anatomy was awarded a special prize, "because it was greatly distinguished for originality and research."

On his return after two years of study abroad Dr. Osler began to teach pathology in his alma mater. He was made professor of the institutes of medicine of McGill University in 1874, and remained in this position until 1884, when he accepted the professorship of clinical medicine in the University of Pennsylvania, Philadelphia. In 1889 he became professor of principles and practice of medicine in Johns Hopkins University, Baltimore, leaving this position in 1905 to become regius professor of medicine at Oxford.

In 1911 he was created a baronet of the United Kingdom, by King George V. He was deservedly honored by many universities and scientific bodies. He received the honorary degree of LL.D. from McGill University in 1895, the universities of Aberdeen and Edinburgh, in 1898; University of Toronto, 1899; Yale University, 1901; Harvard University, 1904, and Johns Hopkins, 1905; the degree of Doctor of Civil Law from Trinity University, Toronto, in 1902, and the University of Durham in 1913; the degree of Doctor of Science, from Oxford University in 1904, Liverpool University in 1910, and the University of Dublin in 1912. He was made a fellow of the Royal College of Physicians in 1883, and a fellow of the Royal Society in 1898.

Dr. Osler was an accepted authority in medical science, and as a teacher he aroused affection and enthusiasm in his students. The model medical clinic which he organized at Johns Hopkins was the first of its kind in this country, and in this clinic were trained many medical students and young physicians for higher work in clinical medicine, inspired by Dr. Osler's example and precepts. His literary work was of a high degree of literary and scientific merit, and was always inspired by lofty ideals. His literary works comprise 730 titles, chief among which were his Principles and Practice of Medicine, which appeared in 1892, and the encyclopedic Modern Medicine, of which he was coeditor.

Dr. Osler was taken ill with pneumonia in November, and later was reported to be convalescing; but pleurisy with effusion developed, necessitating a thoracentesis. On Christmas day he sent a typically cheerful telegram to Johns Hopkins Hospital, announcing that he was making a good fight; three days later he died. He is survived by his wife; his only son died while on active service in the war.

Thomas Terrell Jackson ⊕ San Antonio, Texas; University of Texas, Galveston, 1893; aged 51; president-elect of the State Medical Association of Texas; division surgeon of the Southern Pacific System; formerly president of the Bexar County Medical Society and Western Texas Medical Association; formerly secretary of the State Board of Medical Examiners, and a member of the State Board of Health; formerly president of the board of directors of the Southwestern Insane Hospital, San Antonio; a member of the San Antonio Board of Health, and health officer of Bexar County; captain and assistant surgeon, United States Volunteers, during the War with Spain; and major, M. C., U. S. Army, during the world war, and honorably discharged, Dec. 4, 1918; died December 12, from heart disease.

Charles Henry Cook ⊕ Natick, Mass.; Bellevue Hospital Medical College, 1875; aged 74; a trustee of the Leonard Morse Hospital, Natick, since its organization in 1893; a member of the Massachusetts Board of Registration since 1909, and first president of the Federation of State Medical Boards of the United States, serving from 1913 to 1916; died December 3, from cerebral hemorrhage.

Daniel Eli Haag, Liberty Center, Ohio; Cincinnati College of Medicine and Surgery, 1880; aged 84; for many years professor of materia medica and therapeutics and dean of the faculty of the Toledo Medical College, and president of

⊕ Indicates "Fellow" of the American Medical Association.

the board of trustees of Robinwood Hospital, Toledo; president of the Liberty State Savings Bank; died December 9, from heart disease.

Paul Gillespie ✠ Wyoming, Ohio; Miami Medical College, Cincinnati, 1897; aged 48; local surgeon of the Cincinnati, Hamilton and Dayton Railroad; while driving his automobile over a grade crossng at Hartwell, December 15, was struck by a Baltimore and Ohio train, and sustained injuries from which he died a few hours later in Christ Hospital, Cincinnati.

Alexander James Connell ✠ Scranton, Pa.; Bellevue Hospital Medical College, 1877; aged 63; attending surgeon to the Moses Taylor Hospital, Scranton, since 1889; surgeon and chief of staff and a member of the board of trustees of the State Hospital of the Northern Anthracite Coal Region of Pennsylvania, Scranton; died December 18.

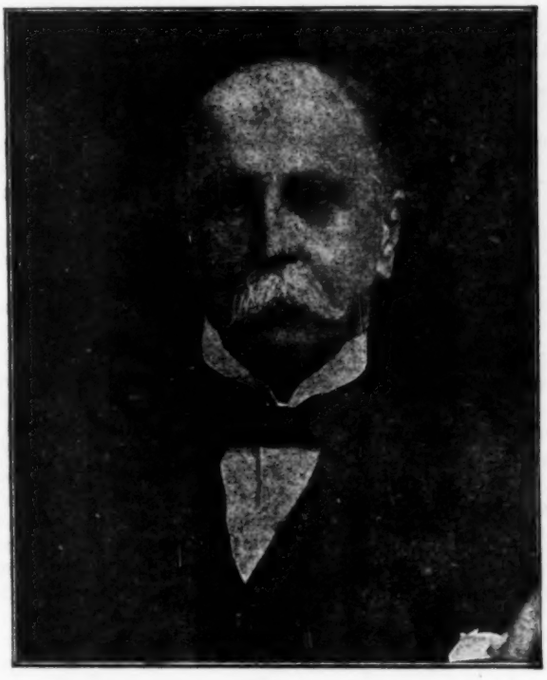
Clarence W. Schaeffer ✠ Philadelphia; Medico-Chirurgical College of Philadelphia, 1907; aged 34; diagnostician for the board of health for diphtheria and scarlet fever, and a member of the staff of the Lankenau, Episcopal, and Pennsylvania hospitals; died, December 19, from heart disease.

William McCarroll ✠ Pontiac, Mich.; University of Michigan, Ann Arbor, 1881; aged 65; one of the organizers of the Oakland County Medical Society, and its president in 1906; one of the organizers and secretary of the Pontiac Medical Society in 1901; died December 12, from pernicious anemia.

Benjamin F. Gardner, Bloomsburg, Pa.; Medical College of Virginia, Richmond, 1865; aged 83; a member of the Medical Society of the State of Pennsylvania; a surgeon in the Confederate service during the Civil War; died at the home of his daughter, December 5, from senile debility.

Percy C. Hoskins ✠ West Chester, Pa.; Jefferson Medical College, 1875; aged 66; once president of the Chester County Medical Society; a member of the staff of the Chester County Hospital and physician to the Smith Memorial Home; died in the Chester County Hospital, December 13.

Paul Ruhnke Lanz ✠ Oakland, Calif.; University of California, Berkeley, and San Francisco, 1899; aged 44; who was awaiting trial on the charge of forging names to prescriptions for narcotics; was found dead in the Hotel Herrick, San Francisco, December 8.



SIR WILLIAM OSLER, 1849-1919

William Bayles VanDuyn, Trenton, N. J.; University of the City of New York, 1866; aged 79; a veteran of the Civil War, and later surgeon, U. S. Army, from which he resigned in 1880; surgeon for the police and fire department of Trenton since 1888; died December 6.

James Van Siclen Woolley, New York City; University of the City of New York, 1868; aged 76; attending surgeon to the Northeastern Dispensary, New York City, since 1870, and visiting physician to the Presbyterian Hospital since 1874; died December 14.

Ormond Willis Murphy, Vancouver, B. C.; Queens University, Kingston, Ont., 1909; aged 38; while driving in his automobile over a grade crossing near Beaconsfield Station, December 6, was struck by an electric railway freight train and instantly killed.

Erastus Van Hood ✠ Ocala, Fla.; College of Physicians and Surgeons, Baltimore, 1884; aged 58; a medical officer during the Spanish-American War; for several years a member of the State Board of Medical Examiners; died December 5.

Melvin H. Turner ✠ Ticonderoga, N. Y.; Albany (N. Y.) Medical College, 1873; aged 57; once president of the village of Ticonderoga; died in Moses Hospital, Ticonderoga, December 12, after two operations for carbuncle.

Giuseppe Dalla-Chiara, New York City; University of Turin, Italy, 1892; aged 53; died in Presbyterian Hospital, New York City, December 15, from carcinoma of the lungs and bronchial tubes.

Florence Nightingale Ferguson Ward, San Francisco; Hahnemann Medical College of the Pacific, San Francisco, 1887; professor of obstetrics in her alma mater; aged 59; died December 15.

John Holloway Pratt ✠ St. Stephens, S. C.; Medical College of the State of South Carolina, Charleston, 1909; aged 44; was shot and killed in an affray near St. Stephens, December 14.

Francis Marion Elliott, Aurora, Ill.; Rush Medical College, 1869; aged 75; a member of the staff of the Aurora City Hospital and St. Charles Hospital, Aurora; died December 9.

John Louis Metzger, Jr., Philadelphia; Hahnemann Medical College, Philadelphia, 1912; aged 29; died in the Hahnemann Hospital, Philadelphia, December 9, from heart disease.

Millard F. Gerrish ✠ Seymour, Ind.; University of Pennsylvania, Philadelphia, 1881; aged 63; secretary of the Seymour board of health; died December 16, from heart disease.

Richard C. Mackey, Hobart, Ind.; Loyola University, Chicago, 1883; aged 57; a member of the Indiana State Medical Association; died December 1, from cerebral hemorrhage.

Stephen D. Yerrington, Bailey, Mich.; Michigan College of Medicine and Surgery, Detroit, 1899; aged 73; died at Grant, Mich., November 27, from valvular heart disease.

John T. Townley ✠ Milwaukie, Ore.; University of Oregon, Portland, 1906; aged 50; for many years a practitioner of Portland; died December 9, from arteriosclerosis.

Van Buren Newman, Tilden, Ky.; Miami Medical College, Cincinnati, 1872; aged 80; died at his country home in Henderson County, December 7, from senile debility.

Samuel Augustus Wood, Elmhurst, L. I., N. Y.; College of Physicians and Surgeons in the City of New York, 1879; aged 64; died December 12, from heart disease.

John E. Haggerty, Jr., New York City; Electic Medical College of the City of New York, 1911; aged 43; died December 18, from pneumonia.

Henrietta Eason Holbrook, Lebanon, Ohio; University of Nashville, Tenn., 1899; aged 59; died in an infirmary in Mobile, Ala., December 6, from tuberculosis.

John Edgar Crawford, Ray, Ariz.; Western Pennsylvania Medical College, Pittsburgh, 1905; aged 39; died at the home of his brother in Crafton, Pa., December 14.

Francis R. Stone, Savannah, Ga.; Savannah, Ga., Medical College, 1860; aged 83; surgeon in the Confederate service during the Civil War; died December 9.

William Bruce Stricker ✠ Nanticoke, Pa.; Medico-Chirurgical College of Philadelphia, 1901; aged 42; died November 18, from pneumonia.

William P. Hanna, Lafayette, Ind.; Jefferson Medical College, 1877; aged 69; died in his apartment, December 13, from cerebral hemorrhage.

John Gray Blount ✠ Washington, N. C.; Bellevue Hospital Medical College, 1892; aged 49; died December 8, from cerebral hemorrhage.

Chester Jennings, Little Rock, Ark.; Tulane University, New Orleans, 1883; aged 61; died December 11, from bronchial pneumonia.

Charles H. Janney, Washington, D. C.; University of Maryland, Baltimore, 1885; aged 57; died December 4.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

"ANTI-PNEUMOCOCCIC OIL" AND THE USE OF CAMPHOR IN PNEUMONIA

Report of the Council on Pharmacy and Chemistry

The Council has adopted and authorized publication of the report which appears below. This report declares "Anti-Pneumococcic Oil" (a solution of camphor in oil sold by Eimer and Amend, New York) ineligible for New and Nonofficial Remedies because (1) the recommendations for its use in pneumonia are not warranted by the evidence, (2) the name is not descriptive of its composition but is therapeutically suggestive, and (3) the sale of a solution of camphor in oil under a name nondescriptive of its composition is unscientific and a hindrance to therapeutic progress.

W. A. PUCKNER, Secretary.

The Council having decided to consider Anti-Pneumococcic Oil (Eimer and Amend, New York), the preparation was assigned to the Committee on Therapeutics for report. The report that follows was made by a member of this committee:

According to the advertising, Anti-Pneumococcic Oil is a "twenty-five per cent. solution of camphor in a thin oil" which was "originated" by August Seibert, M. D. The following directions are given for its use:

"10 c.c. (150 minims) to every 100 pounds of body weight, to be injected hypodermically every eight to twelve hours in pneumococcic pneumonia, as soon after the initial chill as possible."

It is claimed that the prescribed dose one hour before general anesthesia begins, "safeguards against postoperative pneumonia," and, that "animals can so be immunized against later and otherwise fatal intravenous pneumococcic infection (Boehnke, Institute for Experimental Therapy, Frankfort)." The advice is given:

"In pneumococcic meningitis, endocarditis and pleuritis, 3% of salicylic acid should be added to this oil."

In an article by Seibert, "Camphor and Pneumococci" (*Medical Record*, April 20, 1912), a reprint of which is used to advertise Anti-Pneumococcic Oil, previous work (*München. med. Wchnschr.*, No 36, 1909) is mentioned as the starting point for the use of camphor in pneumonia. In this article, the author reports his first case, that of a young woman who entered St. Francis' Hospital on the third day after the initial chill "with the symptoms of severe toxemia (unconscious, temperature 105.5 F., pulse 130, and respiration 40) and involvement of both lower lobes." "Large doses of camphor," 12 c.c. of a 20 per cent. solution, were injected hypodermically "every twelve hours, resulting in *gradual* improvement and recovery by the fourth day, without a crisis." Seibert reports success in its use in twenty-one cases, but gives no case histories or protocols. He admits, however, that in four out of sixteen cases, following the first twenty-one so reported certain "limitations of this treatment were observed," and a "sudden rise of temperature in two patients on the second and third days of treatment, respectively, proved to be due to pneumococcic nephritis, promptly subdued by appropriate doses of urotropin, while the camphor injections were continued and resulting in speedy recovery." He further admits that empyema occurs, and states: "This proves that the camphor brought into the blood cannot prevent the as yet living organisms, constantly entering the blood current from the affected alveoli, from colonizing in the renal and pleural tissue."

He reports, among thirty-seven patients treated in this manner, one death, that of a man 68 years old, weighing 200 pounds, with a fatty heart. Heart failure was the real cause of death. Seibert also reports some very incomplete experimental work; Dr. Hensel, assistant and pathologist of the German Hospital, found that "1/10,000 part of camphor added to the usual culture media inhibited the growth of pneumococci, while the controls all thrived"; Dr. J. C. Welch, pathologist of the Lying-In Hospital, found that rabbits infected with lethal doses of pneumococcus cultures intravenously were saved by large doses of camphorated oil; fragmentary protocols are given. The assistant pathologist of St. Francis' Hospital carried on the experimental work, adding salicylic acid to the camphor. No blood cultures are reported. The conclusion reached by Dr. Seibert is that salicylic acid up to 3 per cent., added to the camphorated oil, is effective in preventing pleural infection. In the article by Dr. Seibert, there appear most sketchy reports of cases, recovery being reported without crisis in from three to nine days.

The referee has made a careful search of the literature, with the following results: Boehnke (*Berl. klin. Wchnschr.* **50**:818, 1913), using white mice, failed to confirm the experiments reported in Seibert's paper, unless camphorated oil were given before the pneumococci, and even then, he felt that the results were too irregular to be of great significance. When given with anti-pneumococcic serum, however, he felt that there was some benefit to be seen by the administration of camphor; his protocols, however, are not detailed. There is no report of blood cultures, etc.

Another worker, H. Leo (*Deutsch. med. Wchnschr.* **39**:690, 1913), reported that camphor water given intravenously prolonged the lives of thirty-eight rabbits inoculated with pneumococci. Here again there were no adequate protocols and very little evidence of careful experimental work appears.

In the literature of the past ten years, there appear sketchy clinical articles on the value of huge doses of camphor in pneumonia. Markevitch (*Russk. Vrach*, June 27, 1914; abstr., THE JOURNAL, Dec. 5, 1914, p. 2081) treated 226 cases of pneumonia with 5 c.c. of camphorated oil hypodermically four times daily, at the same time giving digitalis (amount not stated), with a mortality of 6.6 per cent., whereas, in 322 cases untreated, there was a mortality of 13.3 per cent. He reports 133 grave cases; sixty-six received no camphor; 48 per cent. died. Of sixty-seven treated with camphor, only 22 per cent. died. He reports temperature falling by lysis when camphor is used, and comments on the symptomatic improvement following its use. With the great variation in the clinical course of pneumonia, the above figures, though suggestive, certainly need further support before the routine use of camphor as recommended by Seibert can be sanctioned.

Later articles found on the subject refer to it in a very cursory way, giving no protocols and no cases, and giving the referee the feeling that the conclusions were very impressionistic.

RÉSUMÉ

After careful search of the literature, the referee concludes that: Huge doses of camphor, to 250 grains in twenty-four hours, may be given to man without serious results. No satisfactory evidence, however, appears that camphor has a specific germicidal action on pneumococci (similar to that of ethylhydrocuprein). The clinical evidence, as found in the literature, is certainly of very little value. It appears that the sale of a simple solution of camphor in oil under the guise of "Anti-Pneumococcic Oil" is to be deplored (a 20 per cent. solution of camphor in cottonseed oil is official in the U. S. Pharmacopeia as camphor liniment). It is recommended that the preparation be held inadmissible to New and Nonofficial Remedies because exaggerated therapeutic claims are advanced for it, and because the name is not descriptive of the composition, but is, instead, therapeutically suggestive.

Health First Means Safety First.—Eyestrain is a cause of headache and general bodily fatigue which could be eliminated with but little expense or loss in time and with an obviously great reduction in the amount of accidents.—*Minnesota Health J.*, Nov. 20, 1919.

Correspondence

"ALLEGED PLACENTAL FUNCTIONS"

To the Editor:—In an editorial comment (THE JOURNAL, Dec. 6, 1919, p. 1774), based largely on certain clinical observations recorded by Hammett and McNeile, your conclusions appear to be that we must "hesitate to give the placenta a place in endocrinology." I heartily concur with the display of such a laudable spirit of conservatism in the new and untried field of endocrinology, in which the tendency has been to allow speculation to outrun discretion. However, neither in Hammett's articles (let me instance the one on the "Function of the Internal Secretion of the Placenta," *Endocrinology* **3:** 307 [July-Sept.] 1919, which contains a summary of his work) nor in your comment has the evidence of the endocrine function of the placenta been favorably presented. The difficulties confronting research on this problem, because of the presence of ovaries and fetus, are numerous and baffling, and until recent years little progress had been made:

1. The earlier work of Veit and his successors who attempted by means of precipitin, complement fixation and similar tests to prove that eclampsia is due to an overwhelming of the maternal organism by foreign (placental) protein has been discredited, although the hypothesis has not been disproved.

2. The researches of Lane-Claypon and Starling and of others dealing with the growth of the breasts during pregnancy were performed with aqueous extracts of the placenta which contain none of the active principle, or mere traces of it. Moreover, these investigators were unaware of the cyclic changes occurring in the breasts during rut and were misled by these periodic changes, as Unger and I pointed out (*Arch. Int. Med.* **7:** 812 [June] 1911).

3. Not until extracts prepared by extracting placental material with lipoid solvents had been used (Iscovesco: *Compt. rend. Soc. de biol.* **73:** 104, 1912. Aschner: *Arch. f. Gynäk.* **99:** 534, 1913. Herrmann: *Monatschr. f. Geburtsh. u. Gynäk.* **51:**1, 1915. Frank and Rosenbloom: *Surg. Gynec. & Obst.* **21:** 646 [Nov.] 1915) were the results positive or concordant. The positive results were due to the greatly increased concentration of the active substance which is present in minute quantity only in the fresh placenta.

4. The problem is still further complicated by the fact that the corpus luteum of the pregnant ovary contains an active principle which acts similarly on the breasts (and uterus) to the substance contained in the placenta. So far as studied, a close biologic identity exists between these two substances (Frank: *Surg. Gynec. & Obst.* **25:** 329 [Sept.] 1917). For that reason, experiments dealing with breast hyperplasia must be conducted not only on virgin animals but also on animals castrated before their first rut (compare paragraph 2). As an additional precaution, at least one breast should be removed and kept for control before beginning the experiment.

5. A sharp distinction must be drawn between the physiologic *growth* of the glandular structures of the breast during pregnancy (hyperplasia) and the post partum *secretory* activity of the fully formed gland. This question was discussed by me as early as 1912 (*Arch. f. Gynäk.* **97:** 183, 1912), as the distinction between substances causing *breast hyperplasia* and *galactagogues* was already frequently lost sight of. Hammett appears to have fallen into the same error. "In an experiment carried on at the Boston Lying-In Hospital during the winter of 1917-1918, it was impossible to detect by *bedside observation* [the italics are mine] an increased growth of mammary tissue when desiccated placenta was fed post partum to lactating women, as compared with a series of patients not receiving the placental material" (Hammett: *Endocrinology* **3:** 307 [July-Sept.] 1919). Post partum, let it be understood, the mammary gland has reached its maximum development and is not amenable to further stimulation (the increasing refractoriness to stimulation, as the physiologic maximum is approached, has been mentioned by me in the *Journal of Cancer Research*, Proceedings of the American Association for Cancer Research, **2:** 515, 1917). Moreover, *bedside* observations do not lend themselves to delicate quantitative determinations. The question as to whether placental extracts exert a galactagogue action is quite distinct from the question of placental internal secretory activity. With Halban (*Arch. f. Gynäk.* **75:**353, 1905), I believe that the placenta inhibits milk *secretion*. The infinitesimally small amount of active substance contained in 10 grains of desiccated placenta, as given by Hammett, is far too small to produce such an effect, were it obtainable, particularly when introduced by mouth.

6. The report of Hammett that "it is evident that there is produced in the placenta some substance capable of acting as a stimulus to growth, when ingested by the mother and passed on to the infant in the lacteal secretion . . ." need not be dilated on in this connection. This is a question for pediatricians and food experts to settle from the clinical standpoint, but cannot be proved or disproved by means of infants observed under the varying and uncontrollable conditions existing in the best conducted maternity hospital; nor is an observation period of two weeks sufficient to permit the drawing of conclusions. To apply these observations to the fetus in utero is even more unjustified.

7. The evidence in favor of considering the placenta as a true gland of internal secretion may be thus indicated, in bare outline: By extraction of placental substance with lipoid solvents, a viscid concentrate is obtained which is thermostabile and resists fairly concentrated acids and alkalis. When it is injected subcutaneously into virgin immature castrates (rabbits show the changes most conclusively, but guinea-pigs, white rats and female dogs also react positively), rapid hyperplasia of the uterus and breasts results. On withdrawal of the extract, both uterus and breasts (the latter mainly in their acinous structures) regress. Colostrum then appears in the breasts, if the stimulation has been carried to the proper degree of development, in from three to seven days after conclusion of the injections. (For a short outline, the reader may consult Frank: The Placenta Regarded as a Gland of Internal Secretion, *Surg. Gynec. & Obst.* **25:**329 [Sept.] 1917.)

8. As stated in the article just referred to, the possibility cannot be denied that the active substance originates in the corpus luteum of pregnancy, and is merely stored in the placenta. Against this hypothesis, the fact that only minute amounts occur in the placenta, and that when inaugurated, the changes continue in spite of castration, must be weighed.

No experiments have been performed to determine whether the placenta of animals castrated during pregnancy contains less of the active substance, nor would such experiments prove conclusive even if exact quantitative methods of extraction were at our disposal. Therefore, the origin of the active substance obtained from the placenta must at present be ascribed to this temporary but important gland.

ROBERT T. FRANK, M.D., New York.

"ACUTE ABDOMEN"

To the Editor:—In reply to Dr. M. W. Lyon, Jr., whose letter (THE JOURNAL, Dec. 20, 1919, p. 1897) takes issue with the designation "acute abdomen": The reference is to a report of remarks by Dr. Deaver. I wish to refer to the usage of the same terminology by Dr. Charles L. Gibson of New York, whom every Cornell student remembers as a purist in surgical nomenclature. Lymph glands exist for some surgeons, but only lymph nodes for Dr. Gibson. My own memories of the course in medicine at Cornell include none more vivid than Dr. Gibson's "Please do not say 'lymph glands' in my clinic!" Did a student mention carcinomas or sarcomas? He learned instanter that he meant carcinomata or sarcomata. Let a student, demonstrating on a patient, say to Dr. Gibson "And here is your adenitis," and the response would inevitably be "Not *my* adenitis!"

This is submitted as evidence that Dr. Gibson is untiring in his efforts to instil into his students a sense of accuracy in nomenclature. Therefore, when he begins his lectures in

surgery with "Acute abdominal disease—the so-called 'acute abdomen,'" it is my own feeling that "acute abdomen" has the endorsement of usage by a past master of terminology. Dr. Gibson's syllabus of lectures, open before me as I write, begins:

A. ACUTE ABDOMINAL DISEASE
"ACUTE ABDOMEN"

The quotation marks that indicate Dr. Gibson's attitude toward the term that he uses with this qualification were omitted from the report of Dr. Deaver's remarks referred to before. I cannot refer at the moment to any writing of Dr. Deaver's that will show whether he uses quotation marks as does Dr. Gibson. At all events, with or without quotation marks, "acute abdomen" gives the impression of a condition for which something should be done in a hurry; and I do not feel that it is advisable to adopt a longer terminology even as a concession to purity of diction.

RAMSAY SPILLMAN, M.D., Washington, D. C.

Dr. Spillman's letter was referred to Dr. Lyon who replies:

To the Editor:—Dr. Spillman's chief argument for the employment of "acute abdomen" seems to be that it has the sanction of Dr. Charles L. Gibson, an undoubted purist as shown by several examples. The fact that Dr. Gibson uses the term within quotation marks is an admission that the expression is irregular. I see no special objection to using it with quotation marks. Like "T. B. bugs," "beasts" as applied to protozoa, and "shots" of bacterins, such expressions as "acute abdomen, acute appendix, chronic appendix," etc., would be better confined to familiar conversations than be used in formal speech or publication.

The Century Dictionary defines acute as follows: "1. Sharp at the end; . . . 2. Sharp or penetrating in intellect; . . . 3. Manifesting intellectual keenness or penetration; . . . 4. Having nice or quick sensibility; . . . 5. Keen; sharp; intense; poignant: said of pain, pleasure, etc. 7. In *pathol,* attended with more or less violent symptoms and coming speedily to a crisis: applied to a disease: as an acute pleurisy: distinguished from subacute and chronic." Such definitions scarcely apply to the human abdomen. With respect to the seventh definition it must be borne in mind that the abdomen is not a disease and that the abdomen does not have symptoms although diseases of the abdomen are characterized by symptoms.

"Acute abdomen" might be used temporarily with propriety when something "should be done in a hurry," but after it has been done it would be in the interest of better English and pathology to employ a more elegant and accurate expression.

M. W. LYON, JR., South Bend, Ind.

[COMMENT:—Scientific medicine demands scientific phraseology. When a doctor "operates" his patient, let it be understood that he "works" him. And if he "operated on" him, let him say so. "Operated cases" and "The child had no temperature" are further samples of the loose English too often used by scientific men.—ED.]

PHYSICIANS AND GENETICS

To the Editor:—"Given an incorrect diagnosis and you can cure any disease" is, I believe, a current saying in the profession. It seems to draw attention to one of the most striking spectacles of modern times—the expanding field of knowledge which the physician is drawing on for his diagnosis. The day is gone by when a look at the tongue and a count of the pulse and a few words with the patient are enough. The modern physician has come to realize that his patient is more than the product of a few years of growth; that he is, in fact, a combination of human stocks with hereditary tendencies.

What diseases are coupled with the hereditary traits? Which are independent of them? How allay the unwarranted phantoms of "hereditary diseases" in nervous patients? How can we distinguish the hereditary tendencies from phenomena of nutrition? These have come to be real questions with every physician. In the field of heredity, as in few others, the evidences of the laws of inheritance are being traced in widely different kinds of living creatures, and no physician can afford to overlook the great experimental work of the agricultural research men of America in this field. Their experiments in the breeding of plants and animals under conditions of control such as physicians cannot have, and on a scale which is impossible in the human species, are creating a fund of knowledge which the physician is bound to recognize.

Sixteen years ago, the secretary of agriculture established an association to bring together the breeders of plants, the breeders of animals, and those interested in human heredity. This association, now the American Genetic Association, has grown and become a real factor in the dissemination of the knowledge of heredity through the distribution to its members of a profusely illustrated journal—the *Journal of Heredity*—which is the property of the association. It is not a journal of the superficial class, but a serious one with contributions from specialists.

No longer should the confusion continue between what characteristics come to us in our inheritance and what ones are acquired. We must understand the importance of each, and not confuse them, if we would produce, by the only way possible, a better and nobler race of human beings.

The physician has become the father adviser of the race. It is in his hands, as in no others, to improve it by his advice and suggestion regarding the most vital problems that come to each individual. The science of genetics is already indebted to him for many great discoveries in eugenics, and from now on looks to him for many of the observations on which the generalizations of the future are to be made. No other class of people is more needed in the building of an American genetic association. May I ask your readers to send to the American Genetic Association, Washington, D. C., interesting photographs and accounts which illustrate the working of the laws of inheritance? A special illustrated folder, containing eighteen illustrations of heredity, will be sent to any one interested in this great subject.

DAVID FAIRCHILD, Washington, D. C.,
President, American Genetic Association.

MEDICAL VETERANS OF THE WORLD'S WAR

To the Editor:—Under this name, an organization was effected at the meeting of the American Medical Association in Atlantic City in June, 1919. At that time the membership numbered about 1,200. The executive committee held a meeting in St. Louis, October 15, and at that time the membership had increased to about 2,200. No profession responded more nobly to the country's call than did that of medicine. At least one third of all the legally qualified physicians in this country served in the Army, Navy, or on the Selective Draft Boards. All of these are eligible to this organization.

The purposes of the organization are multiple and varied. In the first place, it is hoped that annual meetings will give opportunity for renewing acquaintanceship begun and developed in camp and in field. It is desirable to preserve the memory of the hundreds of our profession who fell in defense of their country. Those who aided in making the world safe for democracy should be able to have some word in determining what kind of a democracy they fought for. It is not intended that this organization should be political in any sense, but it will be expected that it will be patriotic in every national and state problem that confronts us in the future. Provision is made in the constitution of this organization for state and local chapters. The membership should be extended until it includes all those that are eligible. The physician is interested in everything that touches the national welfare, and on many points in this connection he is the most competent man to speak. As individuals, medical men may have but little influence. Combined, the profession can be a tower of strength in everything that is good, wise and helpful.

VICTOR C. VAUGHAN, President,
Ann Arbor, Mich.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 13. Chairman, Dr. Samuel W. Welch, Montgomery.

ARIZONA: Phoenix, Jan. 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

CALIFORNIA: Los Angeles, Feb. 16-19. Sec., Dr. Chas. B. Pinkham, 906 Forum Bldg., Sacramento.

COLORADO: Denver, Jan. 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, Jan. 13. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

HAWAII: Honolulu, Jan. 5-8. Sec., Dr. J. R. Judd, Honolulu.

INDIANA: Indianapolis, Feb. 10-13. Sec., Dr. W. I. Gott, 84 State House, Indianapolis.

KANSAS: Topeka, Feb. 10. Sec., Dr. H. A. Dykes, Lebanon.

MINNESOTA: Minneapolis, Jan. 6-9. Sec., Dr. Thos. McDavitt, Lowry Bldg., St. Paul.

MISSOURI: St. Louis, Jan. 12-14. Sec., Dr. George H. Jones, State House, Jefferson City.

NATIONAL BOARD OF MEDICAL EXAMINERS: St. Louis and Chicago, Feb. 18-25. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.

NEW MEXICO: Santa Fe, Jan. 12-13. Sec., Dr. R. E. McBride, Las Cruces.

NEW YORK: New York City, Albany, Buffalo, Syracuse, Jan. 27-31. Asst. Professional Examinations, Mr. H. J. Hamilton, Albany.

NORTH DAKOTA: Grand Forks, Jan. 6. Sec., Dr. George M. Williamson, Grand Forks.

OKLAHOMA: Oklahoma City, Jan. 13-14. Sec., Dr. J. M. Byrum, Shawnee.

OREGON: Portland, Jan. 6. Sec., Dr. Frank W. Wood, 559 Morgan Bldg., Portland.

PENNSYLVANIA: Philadelphia, Jan. 13-17. Pres., Dr. John M. Baldy, Harrisburg.

SOUTH DAKOTA: Pierre, Jan. 13. Sec., Dr. Park B. Jenkins, Waubay.

VERMONT: Burlington, Feb. 10-12. Sec., Dr. W. Scott Nay, Underhill.

WASHINGTON: Spokane, Jan. 6-8. Sec., Dr. C. N. Suttner, 415 Old National Bank Bldg., Spokane.

WEST VIRGINIA: Charleston, Jan. 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

WISCONSIN: Madison, Jan. 13-15. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

THE LOS ANGELES MATERNITY SERVICE

A Municipal Dispensary *

LYLE G. MC NEILE, M.D.

Supervising Obstetrician, Los Angeles Health Department; Attending Obstetrician, Los Angeles County Hospital

LOS ANGELES

In many maternity dispensaries, the primary object has been the teaching of clinical obstetrics to medical students; in such instances the patient is regarded merely as "teaching material," and has been used principally in the teaching of diagnosis. Little attention has been paid to the normal case, and treatment has been detailed to poorly trained assistants. In many of these dispensaries, the actual delivery of the patient has been done by medical students without supervision, and little if any attempt has been made to follow up the case.

Other maternity dispensaries have been operated from purely charitable motives; and if the number of cases cared for by such dispensaries becomes large, the immediate needs of the patient are apt to be considered of paramount importance, and as soon as she is delivered her future is lost sight of.

It is only within recent years that the state has recognized that one of its duties in the promotion of public health is the maintenance and proper regulation of well equipped dispensaries. While health departments throughout the United States have in many instances maintained general dispensaries for the diagnosis and treatment of the common diseases, the obstetric work of the community has in general been left to private dispensaries, and to dispensaries maintained by medical schools and lying-in hospitals. With the recognition of the economic value to the community of the unborn child, and of the child during the first year of its life, the public is becoming more interested in the problem of the maternity dispensaries. The public health dispensaries recognize the necessity for charity, and furnish, without charge to those who are in need, such medical services as they require. These dispensaries must also recognize, if they are to fulfil their entire function—the furtherance of every measure which would aid in maintaining the first degree of public health—that the proper education of medical students is a public health measure. It is well recognized that in the care of the pregnant woman an attendant possessing the highest type of medical education is required, if the mother and child are to be properly safeguarded. Public health is concerned not only with the life of mother and child, but also with the future health of both. It has been estimated that more than 20,000 women die each year in the United States of conditions which are the direct result of pregnancy. It would seem reasonable to argue that in the presence of such a death rate, health departments throughout this country should feel directly concerned with such measures as will materially reduce these appalling figures.

We feel that every woman has a right as a taxpayer—and all are taxpayers, either directly or indirectly—to demand such provision from the state as will insure her the best chance for a living baby, and good health following delivery.

With these various problems in mind, the Los Angeles Health Department in September, 1915, established the Los Angeles Maternity Service. The object of this service is to provide competent medical attendance for needy mothers, during pregnancy, labor, and the lying-in period.

GENERAL PLAN OF ORGANIZATION

The maternity service is actually the division of obstetrics, to which is referred anything of an obstetric nature which comes to the attention of the health department. In charge of this division is an assistant health commissioner, who is responsible only to the health commissioner.

The assistant health commissioner in charge of the division is known as the supervising obstetrician. The position can be filled only by a trained obstetrician, and not by a general practitioner. The supervising obstetrician receives his appointment from the health commissioner direct, and conditions in the Los Angeles Health Department are such that it seems probable that political activities will never determine the appointment of a physician to this position.

Two resident physicians report directly to the supervising obstetrician. These physicians are in reality interns in obstetrics. The senior resident physician receives $75 a month, with room, and the junior resident physician receives $25, and room. On appointment, the physician becomes junior resident physician, and after three months he is promoted to senior resident physician. The total length of service is six months, but the physician may elect to stay for a longer period. The resident physicians are appointed by the supervising obstetrician, and must be graduates of a medical college approved by the American Medical College Association, and licensed to practice medicine and surgery in California.

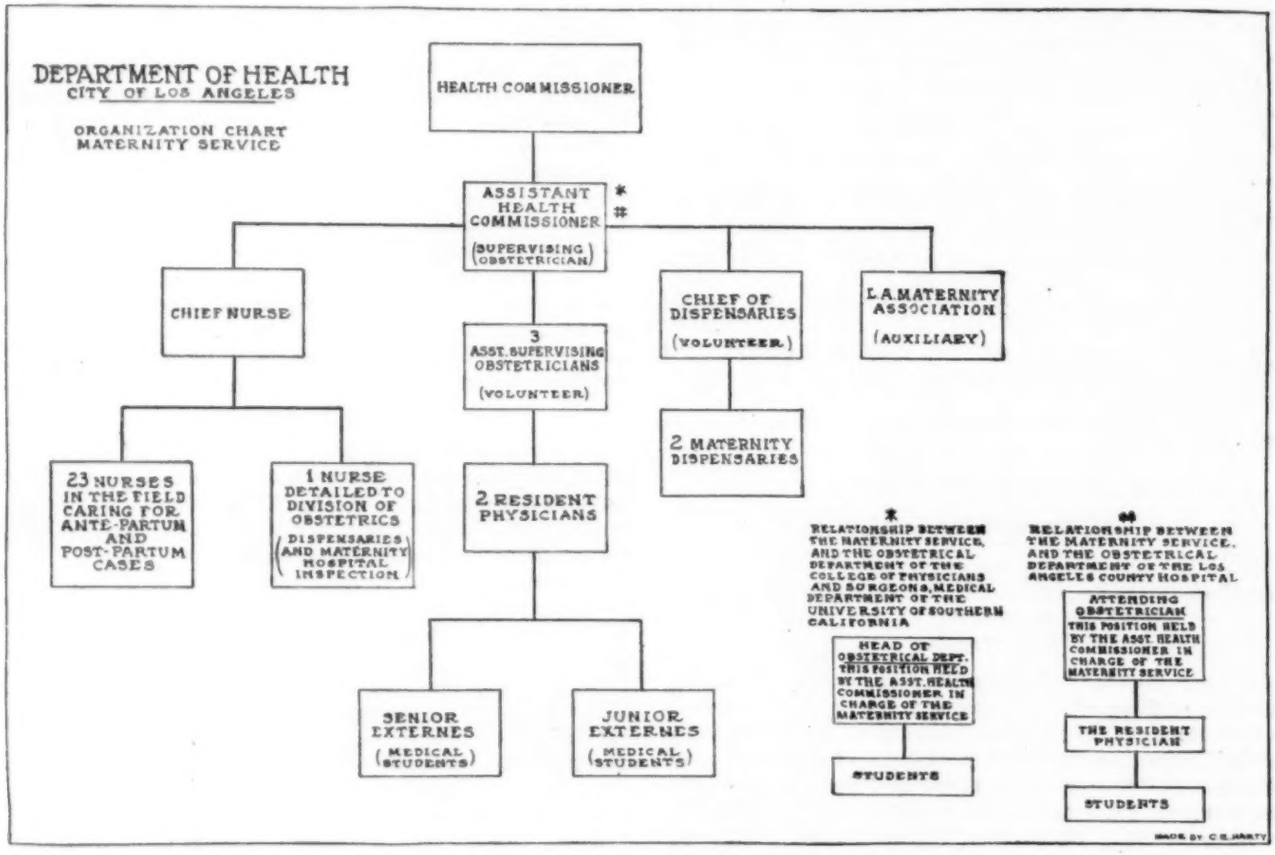
The assistant supervising obstetricians are appointed by the supervising obstetrician, and act as consultants to the resident physician on all cases. Their function is practically identical with that of the junior attending staff in hospital organization. The assistant obstetricians on this staff are all appointed as a result of teaching positions held by them in the obstetric department of either of the medical schools in Los Angeles.

The externs are senior medical students assigned in rotation from their respective schools for clinical work in

* Read before the Los Angeles Obstetrical Society (a section of the Los Angeles County Medical Association), May 13, 1919.

obstetrics. They serve continuously for two weeks on the dispensary staff, and report directly to the resident physician. They are at all times subject to, and under orders from, the supervising obstetrician and his assistants. All of their work is outlined and prescribed, and they are not allowed to do any obstetric work except under the direct supervision of the resident physician or a member of the staff. Conditions at present require the services of from three to five interns at all times.

The nurses, twenty-four in number, receive their orders from the supervising obstetrician through the chief nurse in charge of the bureau of nursing. They are civil service employees. One nurse is assigned to maternity hospital inspection, attendance at maternity clinics, and the general work of this division. There are twenty-three nurses in the field who care for antepartum and postpartum cases. We do not, at the present time, receive the services of a nurse at the time of delivery.


DEPARTMENT OF HEALTH
CITY OF LOS ANGELES
ORGANIZATION CHART
MATERNITY SERVICE
HEALTH COMMISSIONER
ASSISTANT HEALTH COMMISSIONER
(SUPERVISING OBSTETRICIAN)
*
#
CHIEF NURSE
3 ASST. SUPERVISING OBSTETRICIANS
(VOLUNTEER)
CHIEF OF DISPENSARIES
(VOLUNTEER)
L.A. MATERNITY ASSOCIATION
(AUXILIARY)
2 MATERNITY DISPENSARIES
23 NURSES IN THE FIELD CARING FOR ANTE-PARTUM AND POST-PARTUM CASES
1 NURSE DETAILED TO DIVISION OF OBSTETRICS
(DISPENSARIES AND MATERNITY HOSPITAL INSPECTION)
2 RESIDENT PHYSICIANS
SENIOR EXTERNES
(MEDICAL STUDENTS)
JUNIOR EXTERNES
(MEDICAL STUDENTS)
* RELATIONSHIP BETWEEN THE MATERNITY SERVICE, AND THE OBSTETRICAL DEPARTMENT OF THE COLLEGE OF PHYSICIANS AND SURGEONS, MEDICAL DEPARTMENT OF THE UNIVERSITY OF SOUTHERN CALIFORNIA
HEAD OF OBSTETRICAL DEPT. THIS POSITION HELD BY THE ASST. HEALTH COMMISSIONER IN CHARGE OF THE MATERNITY SERVICE
STUDENTS
** RELATIONSHIP BETWEEN THE MATERNITY SERVICE, AND THE OBSTETRICAL DEPARTMENT OF THE LOS ANGELES COUNTY HOSPITAL
ATTENDING OBSTETRICIAN
THIS POSITION HELD BY THE ASST. HEALTH COMMISSIONER IN CHARGE OF THE MATERNITY SERVICE
THE RESIDENT PHYSICIAN
STUDENTS

Organization of maternity service, Los Angeles department of health.

RELATION TO ALLIED ORGANIZATIONS

It is, we believe, essential that in a dispensary service of this kind, the most intimate relationship should exist between the dispensary, one or more reputable medical colleges, and a first class hospital maintaining a department for the reception and care of obstetric patients. We believe that our plan of organization meets all of these requirements.

The supervising obstetrician also holds the chair of obstetrics at the University of Southern California Medical Department (College of Physicians and Surgeons). He is therefore in direct touch with a majority of medical students acting as externs on the service, and is able to appreciate the problems peculiar to the teaching of clinical obstetrics.

In addition, the supervising obstetrician acts as attending obstetrician to the Los Angeles County Hospital, which maintains fifty beds for obstetric patients. In this hospital are provided adequate facilities for the care of such dispensary patients as require hospital care.

EQUIPMENT

The maternity service has been taken care of in the matter of quarters and equipment. Labor bags, each containing the necessary equipment for the conduct of a normal obstetric case, are provided for each extern. We have made it a rule to place no limit on the actual amount of sterile supplies used in a case, but each labor bag is supplied with a tin, sealed container, which contains a sufficient amount of sterile towels, pads, cotton pledgets, and cord dressing, with which to conduct the average case.

The resident physicians' bags are provided with the equipment found in the externs' bags, and in addition contain a Tycos sphygmomanometer, a perineorrhaphy set, forceps, and a copper sterilizer.

Each dispensary is provided with history desks, two gynecologic examining tables, two tables for external examinations, a sterilizing outfit, drug and supply cabinets, card index equipment, and the reagents and apparatus necessary for routine urinalysis.

Externs' quarters are provided at our Ninth Street Dispensary. Two rooms, each containing two beds, clothes closets, desks and bedside tables are sufficient at our Gless Street Station for the resident physicians.

A high pressure sterilizer is maintained at the Normal Hill Center for the sterilization of all supplies used on the service.

ROUTINE MODE OF PROCEDURE

Cases are reported to the office on a post-card form, report of maternity case, or by telephone in case of emergency. The majority of such reports come from district nurses,

charitable organizations, clinics, hospitals and other similar agencies. A relatively large number of calls come from new patients who have heard of the service from "old patients."

On receipt of a call, the clerk makes out a blank antepartum record, which is handed to the extern on duty. The extern sees the patient within a few hours, recording the medical and obstetric history, with the results of his obstetric examination. The patient is given a copy of our leaflet, "Advice to Those Who Are About to Become Mothers," and a dispensary card giving the location of the nearest dispensary, and directions for calling the maternity service at the time of labor. She is instructed to come to the maternity dispensary at least every two weeks throughout pregnancy, and to bring with her, at each visit, a specimen of urine for examination.

TABLE 1.—GENERAL REPORT, SHOWING GROWTH OF THE SERVICE*

Year	1916†	1917	1918	1919
Applications received	427	529	632	773
Women delivered	263	348	408	495
Antepartum house calls	1,020	1,796	3,194	3,158
Postpartum house calls	1,602	2,523	3,112	3,634
Calls at maternity dispensaries:				
Women	736	1,604	2,042	2,047
Children	169	353	454	468
Deaths:				
Mothers	0	0	0	4§
Babies‡	9	19	18	21

* For fiscal year ending June 30, of the year stated.
† Includes the last ten months of the fiscal year (organized Sept. 1, 1915).
‡ From all causes, including stillbirths.
§ All from influenza.

The routine procedure in caring for patients at the dispensary will be discussed under maternity dispensaries. If the patient cannot or will not go to the dispensary, an extern sees her at her home every two weeks throughout pregnancy.

Labor calls are handled by the telephone exchange maintained by the Los Angeles County Medical Association. On receipt of a call, the operator notifies an extern, who sees the patient immediately. As soon as the extern has made his external examination, he notifies the resident physician. The resident physician sees each patient during labor, and is present at each delivery.

All normal deliveries are cared for in the patient's home, but pathologic cases are, so far as possible, sent to the Los Angeles County Hospital, and remain on the service of our supervising obstetrician.

After the delivery, the bureau of nursing is notified, and a field nurse sees the patient each day for six days, and then on alternate days until the patient is discharged. An extern sees each patient once daily for five days, and then on alternate days until she is discharged. At each visit, routine medical and nursing care is given to the mother and child.

No patient is discharged for at least ten days, and then only if she presents no pathologic features. At the last visit, the extern instructs the patient to visit the dispensary in two weeks for final examination.

MATERNITY DISPENSARIES

At present, the maternity service is maintaining two dispensaries for the care of antepartum, postpartum, and gynecologic cases. In antepartum cases, the patients are carefully examined; external pelvic measurements and blood pressure are taken, and urinalysis is made at regular two week intervals. Internal measurements are taken only in early pregnancies.

We are able to make a postpartum examination of mother and child in nearly all of our cases. Gynecologic cases which are not operative are treated in each dispensary, while operative cases are referred to the county hospital.

The effect of the educational work done in these dispensaries is becoming more and more apparent, as larger numbers of patients are coming in and asking that they receive antepartum care, as they have noticed that their friends who have received dispensary care get along better at the time of confinement.

The dispensaries care for a large number of women who expect to go to the hospital for confinement. The dispensaries are under the direct supervision of a trained physician, the resident physicians and externs acting as assistants. The physician in charge has always been a woman, and we are convinced that the best results in similar dispensary work can be obtained only by placing a woman physician in charge. It must be remembered that a majority of the maternity clinic patients are used to the attendance of one of their own sex.

SUPERVISION OF MEDICAL STUDENTS

During the first week of his service, the student is called the junior extern, and is expected to make from eight to twelve antepartum and postpartum calls each day, do the routine urinalysis, and attend the dispensaries. In his second, or senior extern week, he does all deliveries, subject to direct supervision, and attends dispensary.

From the time the student goes on duty, until he leaves, he is under the supervision of a member of the staff. He must report to the exchange every forty-five minutes, unless he is at the "quarters" or actually engaged in the delivery of a patient. In this way, we are able to handle the calls promptly, and to know at all times where the student is, and what he is doing. In addition, he is required to make a daily report in writing at the end of each day's work.

In order to avoid the frequent disagreements which so often follow the giving of verbal orders, a comprehensive outline of all the orders and technic used on the service has been issued in book form, and is given the student several weeks prior to his service.

The average extern makes from sixty to seventy calls in pregnant or postpartum cases, examines (externally) from thirty to fifty pregnant women in the dispensary, and delivers from eight to twelve women during his service. He is called to the county hospital to witness all pathologic cases occurring during this period.

TABLE 2.—REPORT OF COST OF THE SERVICE

Year	1917	1918	1919
Equipment	38.50	35.90	293.39
Salaries	2,100.00	2,100.00	3,033.35
Contractual services*	220.87	192.02	341.53
Supplies	251.22	419.67	622.28
Total	2,610.59	2,747.59	4,290.55
Cost per delivery	7.50	6.73	8.67
Cost per patient based on applications	4.93	4.35	5.55

RELATION TO CHILD WELFARE CENTERS

Every child delivered on this service is referred to the nearest child welfare conference for weekly weighing and supervision of diet during the first two years of its life. Through the cooperation of the district nurses, it has been possible to persuade a large majority of our patients to attend these conferences regularly, and a surprising reduction in first year mortality has resulted.

LOS ANGELES MATERNITY SERVICE ASSOCIATION

There has recently been organized an auxiliary association, formed for the purpose of aiding the maternity service. Through this agency more social service work will be per-

formed, increased facilities for dispensaries will be provided, and eventually a maternity hospital will be erected.

RECORDS

The necessity for accurate and systematic record keeping was recognized at the time this service was first formed, and an appropriate system was installed.

Each report of a maternity case is numbered and filed. A cross reference is made for surname and address in each case. The antepartum record is kept at the quarters and an entry of findings is made each time the patient is seen. All entries are checked by a member of the staff.

Labor records and postpartum records are made at the bedside, and the entries checked. On the completion of a case all the data are filed at the main office.

Daily reports are made by externs and resident physicians, and are made a matter of record. Semimonthly summaries are made on the first and fifteenth of each month, showing all details of the work performed during the current month. A general summary has been kept in such form that it is possible, with the use of an adding machine, to obtain the entire record of the service, or of any period since its establishment, within a few minutes.

CONCLUSIONS

We believe that the maternity dispensary can well be operated as a public health measure. Properly managed, it will aid in raising the standards in obstetric work; will supplant to a large extent the work done by midwives and substitute trained for untrained work; will decrease infant and child mortality; will provide for the registration of births, or other statistics which would otherwise remain unrecorded, and may, in many instances, provide more adequate facilities for the proper training of medical students in clinical obstetrics.

626 Marsh-Strong Building.

Book Notices

THE HEALTH OFFICER. By Frank Overton, A.M., M.D., D.P.H., Sanitary Supervisor, New York State Department of Health, and Willard J. Denno, A.B., M.D., D.P.H., Medical Director of the Standard Oil Company. Cloth. Price, $4.50 net. Pp. 512, with 51 illustrations. Philadelphia: W. B. Saunders Company, 1919.

While it is seldom that a book is issued about which it can be said that it supplies a real need, the statement can be made of this book. So far as the United States is concerned the position of health officer is a new one. However, it is a position that already offers more opportunities than there are men to meet these opportunities. While he has the fundamental knowledge, the average physician is not qualified as a health officer unless he has especially prepared himself, for public health work is a specialty requiring as much special knowledge as any specialty in medicine. The book before us supplies this special knowledge. As the preface says, "It tells the health officer what to do, how to do it, and why he should do it. It describes the various activities in which a health officer engages; his relation to boards of health, physicians, social agencies, and the public; his qualifications and methods of work; the various diseases and insanitary conditions with which he deals; and the scientific principles on which the specialty of preventive medicine is founded." Actually, however, it does more; it discusses fully the more important contagious diseases from a public health point of view, giving diagnosis, management, methods of prevention, etc. The matter is up to date and reliable, the space allotted to the various diseases being wisely adapted to American needs. The illustrations are of practical value. As a whole the book is to be commended, not only to health officers but to all practitioners of medicine, for it contains information that should be available to every physician.

PSYCHOSES OF THE WAR, INCLUDING NEURASTHENIA AND SHELL SHOCK. By H. C. Marr, Lt-Col. R. A. M. C., Neurological Consultant to the Scottish Command. Cloth. Price, $6. Pp. 292. New York: Oxford University Press, 1919.

This book purports to describe the results of the observation of some 18,000 officers and men; but in reality the author has attempted a textbook of psychiatry and has included descriptions of the various forms of low-grade feebleminded-ness. The text presents a curious mixture of abstracts, often poorly digested, from modern neuropsychiatric literature, with primitive conception which may well be termed popular. Thus, in the introductory chapter there is a detailed account of nerve structure followed by a description of the "means of observation of mental phenomena" in which there is little besides a study of facial expression, which is said to give "the most reliable information of the nature and quality of mind." Under the heading of psychasthenia the author quotes Janet (not quite correctly), and then proceeds to describe a series of cases of constitutional inferiority with delinquency which obviously bear no relation to the definition given. Hysteria is "neurasthenia of toxic origin." The system of classification is certainly original, but hardly more than illustrates the view of Dr. Marr that "the primary object of classification is to keep our thoughts in order, and this is difficult to effect in relation to insanity." The case histories are sketchy and incomplete in many particulars, diagnosis depends on a purely formal description of symptoms without analysis, and but little light is thrown on treatment. It is difficult to find any useful purpose that can be served by this book.

SEX AND SEX WORSHIP (PHALLIC WORSHIP): A SCIENTIFIC TREATISE ON SEX, ITS NATURE AND FUNCTION, AND ITS INFLUENCE ON ART, SCIENCE, ARCHITECTURE, AND RELIGION, WITH SPECIAL REFERENCE TO SEX WORSHIP AND SYMBOLISM. By O. A. Wall, M.D., Ph.G., Ph.M. Cloth. Price, $7.50. Pp. 607, with 372 illustrations. St. Louis: C. V. Mosby Company, 1919.

This book is largely based on a collection of erotica available prior to 1896. It is a rather miscellaneous collection of material on the psychology of sex, mythologic beliefs, and the relation of sex to primitive religions. There seems to be a general lack of completeness on any single subject, and lack of organization is apparent not only in the individual chapters but also in the work as a whole. For these reasons the book cannot be classed as a contribution to the advance of knowledge on this subject, since it presents practically nothing that is not available elsewhere. It may, however, be of interest to the casual reader. The illustrations are in large part reproductions of old paintings and sculpture

Social Medicine, Medical Economics and Miscellany

LIVING EXPENSES FOR THIRTY YEARS

There is probably no question today that the average American family views with so much anxious interest as the very practical one of the steadily advancing cost of living. Many discussions appear that take up the topic from various angles. One of the most unique contributions to the general subject appears in the *Outlook*, Dec. 3, 1919. The account given by R. R. R. of his household expenses for the thirty years period from 1889 to 1919 appeals to the reader more than government statistics, as it covers actual family experience and considers two of the elemental factors of human existence—income and outgo. The writer is the head of a family in Massachusetts, and has been a railway employee for thirty years. This significant record begins with 1889, the year of his marriage. In that year he introduced in the home the custom that each member of his family who bought an article was to write down the article and its cost on a tally board. Each week he entered these figures in his "house book." He found that his tally board system encouraged economy in his family. Entering everything on the tally board in black and white served to make the matter

of making ends meet a sort of game that everybody enjoyed. Would they meet or would they not meet? was always very much of a question. Some commodities, such as sugar and flour, were actually cheaper in 1899 than in 1889, and even up to 1909 there was not such a tremendous increase; the greatest came during the past ten, and more especially during the past four years. Table 1 well illustrates this.

TABLE 1.—A COMPARISON OF PRICES OF STAPLE COMMODITIES DURING A THIRTY YEAR PERIOD (1889-1919)

	Butter, per Lb.		Lard, per Lb.		Milk, per Qt.		Sugar, per Lb.		Flour, per Bbl.		Potatoes, per Bushel		Coal, per Ton
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	
1889..	$0.34	$0.26	$0.10	$0.09	$0.05	$0.05	$0.07	$0.07	$7.50	$6.50	$0.80	$0.80	$6.00
1899..	0.34	0.25	0.10	0.08	0.06	0.05	0.05	0.05	5.00	4.50	1.00	0.75	6.75
1909..	0.34	0.26	0.16	0.12	0.06	0.06	0.06	0.05	7.00	6.25	1.20	0.75	7.50
1919..	0.80	0.58	0.43	0.32	0.15	0.15	0.11	0.10	14.00	13.00	4.00	1.00	12.65

Eggs have changed more than any other commodity. In 1897 the highest and lowest prices were 36 and 15 cents a dozen, respectively. In 1919 the maximum and minimum were $1.20 and 40 cents. In 1894 and 1895 sugar was only 4 cents. The highest price prevailed in 1919.

It has been a very close race between the advancing prices and the writer's slowly increasing income. However, he has managed, with the aid of a $500 legacy, to buy a home worth $3,000 and to save $1,600 besides. For life insurance about $1,300 has been spent.

TABLE 2.—WAGE SCHEDULE DURING THIRTY YEAR PERIOD

Year	Daily Wage
1889	$1.75
1892	2.30
1895	2.50
1899	2.75
1902	3.00
1907	3.25
1910	3.75
1916	4.00
1918	5.00
1919	5.50

Since 1903 the writer has been employed as a freight conductor on a small nonunionized railway. He concludes with the thought that while he and his family have never had much, they have had enough.

MODERN HYGIENE

Desfosses publishes in the *Presse médicale* a signed editorial with the heading, "Demagoras, hygieniste." He compares Iatros and Demagoras. Iatros, the physician who has grown old helping the sick; his glory, the gratitude of a few whom he has saved from the tomb. Every day, every hour, he teaches practical hygiene. He is not afraid to tell Demos that many of his ills come from from his bad habits; that physiologic poverty comes often from vices; that the best way to keep well is to be clean physically and morally; he tells the young men that the surest way to avoid venereal diseases is to keep from exposing oneself to contagion; he hints to the workman that cirrhosis and dropsy and even tuberculosis are picked up in the barroom (*se prennent sur le zinc*), and that accidents are often the consequence of imprudence or drunkenness. He teaches that progress in hygiene is possible only by individual effort. General measures are effectual only with the active collaboration of the individual. Every man hews out his own destiny. He preaches constantly moderation in eating and in pleasures, and regularity in habits. But Demagoras with his new diploma as hygienist, obtained after a few months in a bacteriologic laboratory and attending a few lectures on hygiene, declares that the sick are the victims of Society; that diseases are the result of the bad organization of public hygiene. If people are tuberculous, that is because the declaration of tuberculosis has not been made compulsory: how can a disease be combated if its exact prevalence is not known? Far from exhorting Demos to lead a more hygienic life, his axiom is that Society is to blame for everything. If the laboring man drinks liquor, it is because he wants to forget; if he is lazy, it is because he does not get enough food. The young man should be able to obey without restraint the desires which Nature has implanted in him. It is for the antivenereal dispensary to render Venus safe and dry Cupid's tears. To establish once for all and absolutely school hygiene, urban hygiene, industrial hygiene, all that is necessary is to have numerous inspectors, well paid. Demagoras speaks with superb disdain of clinicians. He, himself, represents Science. Medicine for the physicians; hygiene for the hygienists. Demos can without fear seek his pleasures; Demagoras will assure him the scientific organization of hygiene. The people thus hear two voices preaching to them: To keep well, develop your individual energy, do not count on any one but yourself, says the physician. To keep well, develop the system of public functionaries, count on me, clamors Demagoras. We may well imagine how puzzling these two tendencies must prove to laymen accustomed to guide themselves by authority, and who under the circumstances cannot determine by themselves which is the correct advice. It would seem, however, that here as elsewhere, the middle of the road would be the safest, and that both individual hygiene and public sanitation must be observed if Society is to secure a maximum of protection against disease.

Medicolegal

Annulment of Marriage for Concealing Tuberculosis

(*Davis v. Davis* (*N. J.*), *106 Atl. R. 644*)

The Court of Chancery of New Jersey holds that a court of equity has inherent jurisdiction, independent of statute, to annul a marriage on the ground of fraud; and that the suppression by one party of the fact that he is suffering from a disease which renders the close intimacy of the marriage relation dangerous, and which may result in a transmittal of the disease to offspring, is such fraud as will warrant a court of equity in annulling a marriage. More particularly, the court holds that where, at the time of marriage, the defendant husband was suffering from hereditary chronic tuberculosis, and did not inform the petitioner of the fact for the reason that he feared, if he did, she would not marry him, and it appeared that if she had been so informed she would not have, in fact, married him, there was such fraud as would warrant the court in annulling the marriage, notwithstanding the fact that the parties lived together as husband and wife for a period of six months, until the discovery by the wife of the existence of the disease, and notwithstanding the fact that there was a child born, which lived for only four days, where it appeared that, immediately on the discovery of the existence of the disease, the petitioner ceased cohabitation; and such being this case, a decree for the petitioner is advised.

It is well known, says Vice Chancellor Lane in the opinion in the case, that close contact with one suffering from tuberculosis involves great danger of transmission both through infection and through contagion. It is almost impossible to conceive the ordinary relationship of husband and wife existing without that danger ever present. There is always also great danger of transmittal of the disease to offspring, and, if the disease itself is not transmitted, there are likely to be transmitted characteristics which predispose toward the development of the disease. False representations with respect to its existence go, then, to an essential of the marriage relation. They are very different from representations with respect to health in general. They are more akin to representations of freedom from leprosy or diseases of similar nature. I cannot agree that the only diseases which affect an essential of the marriage relation are those of a venereal nature. I can see nothing whatever in good policy, sound morality, or the peculiar nature of the marriage

relation which would warrant the court, after having found the fraud, denying relief. Neither good morals nor public policy are subserved by compelling parties to live together as man and wife, with the ever-present danger of infection, and beget offspring liable to be tuberculously inclined, nor are they subserved by compelling a woman, who has married under a misrepresentation with respect to the fact, to continue to be bound to a man affected with tuberculosis without having the close intimacy to which she is entitled. I am unable to conclude that there is any essential difference, so far as the matter now under consideration is concerned, between tuberculosis and syphilis.

While due caution may require a party to a marriage contract to make his own investigation with respect to fortune, family and other external conditions, it seems to me to be going too far to say that due caution requires a party to a marriage contract to require the production of a medical certificate, and in the case at bar a medical examination would have been required to advise the petitioner of the condition of the defendant. Such a rule is not applied in the case of syphilis, nor do I think it should be in the case of tuberculosis. The suppression by the defendant of the fact that he was suffering from tuberculosis of the nature that he was, for the reason that he did suppress it, was equivalent in law to an express representation on his part that he was free from it.

Board of Health Refusing Permit for Hospital

(People ex rel. Sprenger v. Department of Health of City of New York (N. Y.), 123 N. E. R. 379)

The Court of Appeals of New York, in affirming an order of the appellate division that affirmed one granting a peremptory writ of mandamus commanding the defendant to grant the relator a permit for a private hospital for the treatment of medical, surgical and obstetric cases, says that the head of the department of health of the city of New York is the board of health. The sanitary code enacted by the board of health provides that no person shall conduct a private hospital without a permit therefor issued by the board of health. The regulations of the department of health provide that the proposed site and sanitary condition of the hospital building shall be subject to the approval of the department of health. The charter of the city provides that the board of health may embrace in the sanitary code all matters and subjects to which, and so far as, the power and authority of the department of health extends, not limiting their application to the subject of health only.

The board has general jurisdiction over the establishment and maintenance of hospitals, including the licensing of hospitals. On an application for a permit, it should consider and give proper weight to all the ordinary contingencies and circumstances appropriate to the subject which require the exercise of discretion. The element of location may be material. The effect of a proposed location on property values in the neighborhood need not be wholly disregarded, and may even become decisive in a case otherwise doubtful. But the authority now conferred on the board does not include, expressly or by reasonable implication, the power to refuse a permit, as was done in this case, when all other conditions are satisfactory and no offense to the senses is suggested, for the exclusive reason that "considerable damage would accrue to the surrounding property if the permit were granted." That reason considered alone came not legally within the scope of its discretion. The property rights of one owner may not be subordinated to the property rights of his neighbors, except as an incident to the exercise of authority reasonably conferred for the general welfare. The action of the board was, as the law now exists, unauthorized, and therefore unreasonable and arbitrary; the relator's remedy was mandamus; and the order appealed from should be affirmed, with costs.

The question of legislative power wholly to exclude hospitals, such as hospitals for contagious diseases or for the treatment of inebriates or the insane, from particular places, such as thickly populated or fine residential districts, was not before the court.

Inadequate Ordinance and Complaint of Board of Health

Board of Health of City of Paterson v. Clayton et al. (N. J.), 106 Atl. R. 813)

The Supreme Court of New Jersey, in affirming an order setting aside a conviction of defendant Clayton of a violation of the health code of the city of Paterson, says that the section of the code, or ordinance of the board of health of the city, which he was charged with violating, reads:

"That whatever is dangerous to human life or health, whatever building, erection, or part or cellar thereof is not provided with adequate means of ingress and egress or is not sufficiently supported, ventilated, sewered, drained, cleaned or lighted, and whatever renders the air, food or water unwholesome, are declared to be nuisances and are prohibited Any person violating any of the provisions of this section shall be liable to a penalty of not less than five dollars nor more than one hundred dollars."

The complaint charged that Clayton violated the provisions of this section in this, that he "had people congregated and invited people to congregate in his saloon," at a certain location, such action of his "being dangerous to human life and health, there being an epidemic of influenza in the city." But the court does not think that the complaint charged any violation of the section. Passing the argument, which had much to support it, that the ordinance was aimed at physical conditions pertaining to inanimate objects, and not at human conduct, and, conceding for present purposes that the assembling of a numerous crowd in an unventilated and confined room during an epidemic of contagious disease was within the purview of the ordinance, as to which the court expresses no opinion, there was yet no allegation of any such act in the complaint. Certainly the mere inviting people to congregate in the saloon was not dangerous to life or health. As to the charge of "having people congregated" in the saloon, it might have been as few as three, and there was no proof that there were more, came together at the instance of Clayton in a saloon, of unknown dimensions, with unknown facilities of ventilation, on a certain date, while influenza was in a general way epidemic in the city. It may be freely conceded that epidemics of contagious and infectious disease may be, and have been, so severe and dangerous as to justify the most drastic rules against personal contact of individuals, but there was nothing in the complaint to show that such conditions prevailed in this case, and if they did prevail, the ordinance was not such a rule as to meet the emergency, and it did not support the complaint, which under well-recognized rules must be taken at the minimum of the facts charged.

Physicians Not Required to Report to Defendants

(Tutone v. New York Consolidated R. Co. (N. Y.), 177 N. Y. Supp. 818; Herbert v. Brooklyn Heights R. Co. (N. Y.), 177 N. Y. Supp. 901)

The Kings County, N. Y., court holds in these two personal injury cases that orders for the physical examination of the plaintiffs by physicians were erroneous in requiring that the reports of the physicians should be given to counsel for the defendants. The decisions are by two different justices. In the Herbert case, Justice May says there is nothing in the New York statutes which directs or requires a report to be made by the examining physician. The sole object of the statute in permitting physical examinations is to reduce the likelihood of fraud being practiced to a minimum, by granting the right to the defendant to compel the plaintiff merely to submit to such physical examination at the hands of the physicians, so that testimony thereof may be given on the trial. While it has been customary for physicians so appointed to make a report and deliver it to the defendant, there is no authority apparently in the law therefor. There may be no objection, perhaps, to the disclosure by the physician to the defendant of the results of his examination, but the court has no power to direct him to make such report, and therefore it follows that there can be no direction to deliver a report to the defendant, or to file a report in the office of the county clerk.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

December, 1919, **18**, No. 6

*Early Recognition of Hydrocephalus in Meningitis. K. D. Blackfan, Baltimore.—p. 525.
Stammering as Disorder of Speech Dependent on Conditions of Child Development. E. L. Kenyon, Chicago.—p. 537.
*Rôle of Antineuritic Vitamin in Artificial Feeding of Infants. A. L. Daniels, A. H. Byfield and R. Loughlin, Iowa City.—p. 546.
*Chemical Examination of Blood in Children. H. D. Chapin and V. C. Myers, New York.—p. 555.
Qualitative and Quantitative Changes in Cerebrospinal Fluid of Various Diseases and Their Significance. A. Levinson, Chicago.—p. 568.
*Résumé of Experimental Studies on Cutaneous Hypersensitiveness. E. C. Fleischner, K. F. Meyer and E. B. Shaw, San Francisco. —p. 577.

Hydrocephalus in Meningitis.—Blackfan carried out the phenolsulphonephthalein test in twenty-five cases of meningitis in which hydrocephalus had developed, and had roentgenograms made after the injection of the ventricles with air. Seventeen cases were caused by the meningococcus. Communicating hydrocephalus developed in eight of these cases, and the obstructure form in nine. Ten of the seventeen patients died. Two of the seven patients who recovered had an obstructive hydrocephalus and improvement followed promptly after the introduction of antimeningococcus serum into the ventricles. In four cases in which a communicating hydrocephalus was present, the process became arrested after treatment. The patients made an uneventful recovery. One patient developed a chronic hydrocephalus (communicating). A ventriculogram showed almost complete destruction of the cortex. A necropsy was performed in the ten fatal cases, and the clinical diagnosis was confirmed by demonstration of the exciting cause of the hydrocephalus. In seven cases of obstructive hydrocephalus an exudate occluded the foramina at the base of the brain, and in three cases of communicating hydrocephalus the basal cisternae were totally obliterated by a thick purulent exudate.

Antineuritic Vitamin.—The investigation reported on by Daniels, Byfield and Loughlin indicated that the addition of the antineuritic vitamin obtained from wheat embryo to the diet of babies who are supplied with food furnishing an adequate number of calories stimulated growth. The beneficial influence of adding a specially prepared vegetable soup in sufficient quantity as a part diluent in the milk modifications for infants is apparently due to the presence of the antineuritic vitamin contained therein. Both the alcoholic soluble material of the dried soup vegetables, and the water extract (soup) stimulated growth. The fact that the artificially fed infant requires a larger amount of food than the breast fed infant appears to be due to the relative paucity of diluted cow's milk in the antineuritic vitamin. The authors suggest the probability that failure of infants and young children to gain is often the result of an insufficient amount of the antineuritic vitamin in the food, therefore, the diets of the young should be scrutinized more carefully with this in mind.

Blood Chemistry.—Chemical blood observations were made by Chapin and Myers on 149 children, thirty-eight of whom were nephritics and six diabetics. In general, the results obtained are quite similar to those obtained in the adult, although the kidney of the child would appear to act somewhat more efficiently than in the adult, resulting in slightly lower normal figures for the sugar, urea, creatinin and uric acid, and a slightly better phenolsulphonephthalein output. In harmony with this, nephritis in children does not so quickly result in urea retention as in the adult, making the prognosis more favorable in early than in later life. As might be expected, creatinin retention rarely occurs in children. The authors regard the blood urea as an especially helpful prognostic test in the nephritis occurring in children. The results of phenolsulphonephthalein tests harmonize very well with the clinical findings and the blood urea. The carbon dioxid combining power of the blood is a very reliable method of ascertaining the severity of the acidosis in the diarrheal acidoses. The blood findings of diabetic children do not differ from similar observations in adults.

Cutaneous Hypersensitiveness.—Fleischner and his associates found that bacterial proteins, soluble or insoluble, which sensitize a guinea-pig in an anaphylactic sense will not sensitize its skin.

American Journal of Medical Sciences, Philadelphia

November, 1919, **158**, No. 572

*Recent Advances in Gastric Physiology. W. C. Alvarez, Berkeley, Calif.—p. 609.
*Persistent Eosinophilia with Hyperleukocytosis and Splenomegaly. H. Z. Giffin, Rochester, Minn.—p. 618.
Medical Aspects of Wounds of Chest in War. G. C. Shattuck, Boston.—p. 629.
*Heart in Bronchopneumonia: Activity and Response to Digitalis. T. S. Hart, New York.—p. 649.
*Transfusion of Blood in Pernicious Anemia. J. M. Anders. Philadelphia.—p. 659.
*Hypertension: Its Significance, Relation to Arteriosclerosis and Nephritis and Etiology. E. Moschcowitz, New York.—p. 668.
*Meningo-Encephalitis as Only Manifestation of Mumps: Report of Three Cases. T. Howard, Brooklyn.—p. 685.
*Myxoma of Heart Simulating Bronchopneumonia. W. H. Norton, Mt. Clemens, Mich.—p. 689.
*Bacteriology of Mumps: Report of Findings at Camp Lee. R. L. Haden, Detroit.—p. 698.
Is Essential Epilepsy a Life Reaction Disorder? L. P. Clark, New York.—p. 703.
Blood Transfusion. J. R. Losee, New York.—p. 711.
*Vaccination by Subcutaneous Injection. J. R. Goodall, Montreal. —p. 721.
*Laboratory Studies in Influenza at Camp Travis, Texas. P. B. Matz, U. S. Army.—p. 723.

Recent Advances in Gastric Physiology.—Evidence is presented by Alvarez which suggests strongly that there is a gradient of metabolism underlying and, perhaps, giving rise to the gradients of irritability, latent period and rhythmicity which, it is believed, determine the direction of peristalsis. The metabolic gradient is often found reversed in such animals which are refusing food. There appears also to be a gradient of metabolism in the mucous membrane of the stomach. The lowest values in the whole digestive tract are found in the antrum. It is shown how this may explain the high incidence of cancer in that region and the inability of the tumors to cross over into the duodenum, where there is a very high metabolic rate. An explanation is given for the fact that a sleeve resection gives a better functional result in ulcer of the lesser curvature than a V excision.

Persistent Eosinophilia.—Giffin's patient was a man, 31 years of age. He had a marked splenomegaly, slight enlargement of superficial lymph glands; leukocytosis—21,800 before splenectomy—with an eosinophilia of 73.6 per cent. The spleen was removed. It weighed 2,110 gm. Macroscopic appearance was similar to that of the spleen in myelogenous leukemia. The leukocyte count rose rapidly to 97,200 and later to 211,000; eosinophilia rose from 79 to 90.7 per cent. The patient was in good general condition for a period of four years following splenectomy. Death was due to empyema following pneumonia. At the necropsy, enormous numbers of eosinophilic polymorphonuclears were found in all hemopoietic organs; eosinophilic myelocytes were numerous in lymph glands, spleen and bone marrow. Giffin regards the case as an instance of eosinophilic hyperleukocytosis, the blood picture of which was remarkably altered by splenectomy, and suggests a special function of the spleen with respect to eosinophilic cells or with respect to the toxins which eosinophilic cells are capable of absorbing.

Heart in Bronchopneumonia.—In the cases studied by Hart the routine method adopted was to begin the administration of digitalis as soon as the diagnosis of pneumonia was reasonably sure. There was given of the tincture 25 minims, every four hours, for six doses, which was then reduced to 15 minims, every eight hours, and continued, with modification according to the individual indications, throughout the course of the disease. Patients who developed symptoms of toxemia very rapidly or who were found in this condition on admission, were frequently given from 15 to 30 minims of a digitalis preparation intravenously, and this was repeated every four hours, up to three or four doses, after which time the tincture was usually substituted. For the sake of com-

parison and control a considerable number of cases were from time to time selected at random and treated by methods identical in all respects, except that in these no digitalis was administered. Absolutely no difference in the course of the disease could be observed in the two series, except that the electrocardiograms of those patients receiving digitalis showed the characteristic changes, and in two instances an arrhythmia developed which proved to be due to a condition of partial heart block. The patients to whom digitalis was given ran their course without a change in the pulse rate which could be attributed to the drug. The terminal increase in the heart rate in the fatal cases was identical in both groups. No difference could be noted in the two series in the behavior of the blood pressure. In two cases of chronic cardiovascular disease with auricular fibrillation, the circulatory condition was much improved, the heart became slow and appeared reasonably efficient. Four patients out of several hundred to whom digitalis was given, showed block following digitalis, but recovered and gave no evidence of subsequent ill effects from its administration. In one case block appeared only after the administration of 465 minims of the tincture, in another an almost identical cardiac activity appeared after the administration of 230 minims of the tincture. Other patients in the series received considerably larger amounts of digitalis, and yet showed no evidence of heart block.

Transfusion of Blood in Pernicious Anemia.—Following two injections of 500 c.c. of whole blood (ten months apart), Anders' patient was so much improved in every way that he was able to attend to duties that he had not performed for the past ten years. Anders reviews the literature of 362 cases in which the result was given; in 204, or 56.3 per cent., there was an initiation of remissions. The average number of transfusions per patient was 2.4.

Hypertension Arteriosclerosis and Nephritis.—In many instances, at least, Moschcowitz says the pathologic changes in the kidney of Bright's disease are the results rather than the cause of hypertension. Such a conception would render it very probable that the hypothesis of the primary vascular origin of the lesions in the kidney in Bright's disease is correct. Arteriosclerosis and Bright's disease have therefore the same pathogenesis, the lesion in each being modified by the nature of the organ. The direct etiology of hypertension is unknown. However, a type of person is described, conforming to certain physical and psychic complexes, in whom hypertension is very likely to occur. This type is the antithesis of the child, both in mind and spirit.

Meningo-Encephalitis Due to Mumps.—The three cases reported by Howard are regarded as instances of mumps meningo-encephalitis, in spite of the absence of inflammation of the salivary glands, for the following reasons: 1. They occurred in the presence of a mumps epidemic. 2. Two of the patients had never had mumps, while the third had been told by his father that he had had mumps, but could not remember it himself. 3. They all presented mild symptoms of meningo-encephalitis, which were entirely relieved or much ameliorated by spinal puncture. 4. In two of the three cases there was recovered from the spinal fluid a gram-positive diplococcus. This was found in direct smear and grown in pure culture in both cases. In the third case it was found in smear three times and recovered in culture twice. 5. The spinal fluid in each case presented a moderate pleocytosis, characterized by a predominance of mononuclear cells. The conditions which show this picture are (*a*) syphilis, (*b*) sometimes tuberculous meningitis, (*c*) encephalitis lethargica and (*d*) mumps. As to syphilis, two of the patients were negative serologically and the third, while having a positive Wassermann, repeatedly showed the presence of a gram-positive coccus in the spinal fluid. Tuberculous meningitis is ruled out in all cases by the clinical course. The same is true of lethargic encephalitis, there being no cranial nerve involvement and no palsies of any kind. There was also lacking the increase of tendon jerk almost uniformly present in this disease.

Heart Myxoma Simulating Bronchopneumonia.—Norton describes the clinical and necropsy findings in his case in the hope that eventually a symptom complex for cardiac tumors may be worked out. The left auricle was filled by a tumor mass which was implanted by a broad base on the auricular wall. It was made irregular by polypoid-like growths, bulging the fossa ovalis into the right pulmonary vein, another into the mitral orifice and so completely filling the cavity that it was difficult to pass a small flexible probe between the tumor and auricular wall into the left ventricle.

Bacteriology of Mumps.—Five cases of mumps are reported by Haden in which a gram-positive diplococcus was isolated from the spinal fluid, the blood and a lymph gland. The injection of the organism into the testicle of a rabbit produced a severe orchitis in ten days. These findings confirm previous reports.

Vaccination by Subcutaneous Injection.—A similar article was published in the *Lancet* **2**:285 (Aug. 16) 1919, and abstracted in The Journal, Sept. 20, 1919, p. 942.

Laboratory Studies in Influenza.—The epidemic of influenza at Camp Travis was characterized by the presence of the bacillus of Pfeiffer in 39 per cent. out of a total of 868 throat cultures examined. Blood cultures in the influenza cases were all negative. Blood cultures in the complicating bronchopneumonias gave 11 per cent. positives. The organism recovered was the pneumococcus. The blood picture of the average case of influenza showed a slight leukopenia, with a relative increase of the small mononuclears. When the bronchopneumonia developed there followed a slight increase in the total leukocyte count and an increase of the polymorphonuclears. Chemical examination of the blood showed a retention of urea nitrogen in the pneumonias having no kidney involvement. The retention of urea nitrogen in cases with transient nephritis was no greater. It is Matz' opinion that this retention in the bronchopneumonia under discussion was due to protein injury and distintegration, associated with extensive lung inflammation. Blood chemistry in the empyema cases showed a retention of urea nitrogen. Acidosis was a factor in a large number of the bronchopneumonias.

American Journal of Ophthalmology, Chicago

November, 1919, **2**, No. 11

Macular Hole in Retina. A. B. Middleton, Pontiac, Ill.—p. 779.
Hole at Macula. E. E. Maxey, Boise, Ida.—p. 792.
Disturbance of Vision in Patients Harboring Filarial Tumors. R. P. Luna, Guatemala, C. A.—p. 793.
The Scoop Perimeter. S. J. Beach, Augusta, Me.—p. 796.
Ocular Angioneurotic Edema and Glaucoma. H. Barkan, San Francisco.—p. 800.
Ophthalmologic Paris. C. A. Bahn, New Orleans.—p. 804.
Treatment of Symblepharon and Restoration of Orbital Socket. W. H. Wilder, Chicago.—p. 807.
Visual Disability from Eye Injury and Compensation. S. G. Higgins, Milwaukee.—p. 813.

American Journal of Physiology, Baltimore

November, 1919, **50**, No. 2

Hyperglycemia Provoking Ability of Asphyxial Blood. K. Yamakami, Tohoku, Japan.—p. 177.
*Urea Excretion After Suprarenalectomy. G. Bevier and E. A. Shevky, San Francisco.—p. 191.
Posture-Sense Conduction Paths in Spinal Cord. E. S. May, and J. A. Larson, San Francisco.—p. 204.
Regulation of Blood Diastase. B. Fujimoto, Tokyo, Japan.—p. 208.
Changes in Content of Hemoglobin and Erythrocytes of Blood in Man during Short Exposures to Low Oxygen. H. W. Gregg and E. C. Schneider, Mineola, N. Y.—p. 216.
Circulatory Responses to Low Oxygen Tensions. B. R. Lutz and E. C. Schneider, Mineola, N. Y.—p. 228.
Conduction in Small Intestine. W. C. Alvarez and E. Starkweather, San Francisco.—p. 252.

Urea Excretion After Suprarenalectomy.—It is suggested by Bevier and Shevky that their findings support the hypothesis that an epinephrin-pituitrin balance exists in the blood which may regulate the rate of kidney function, the results obtained after suprarenalectomy exhibiting apituitary effect unopposed by the normal secretion of the suprarenals.

Annals of Surgery, Philadelphia

December, 1919, **70**, No. 6

*Conservative Treatment of Sarcoma of Long Bones. W. B. Coley, New York.—p. 633.
Analysis of Results of Six Years' Follow-Up System in a Hospital Surgical Service. C. L. Gibson, New York.—p. 661.

War Surgery Under Front Line Conditions. E. C. Cutler, Boston.—p. 695.
*Postoperative Suppurative Parotitis. W. H. Fisher, Toledo.—p. 713.
Drainage in Appendicitis. E. T. Rulison, New York.—p. 724.
Ankylosing Operations on Tuberculous Spine. L. W. Ely, San Francisco.—p. 744.
*Experimental Study of Buried Bone. L. W. Ely, San Francisco.—p. 747.
Self-Retaining Slide Bone Graft. H. C. Masland, Philadelphia.—p. 750.
Use of Metallic Fixatures in Securing Bone Fragments. W. L. Bell, Oakland, Calif.—p. 754.
Case of Left Branchial Cyst Opening on Right Side. A. G. Brenizer, Charlotte, N. C.—p. 758.

Treatment of Sarcoma of Long Bones.—This paper consists chiefly of a report of the cases of sarcoma of the long bones that have come under Coley's personal observation during the past five years, with a brief review of cases previously published. The toxin treatment was resorted to in these cases.

Postoperative Suppurative Parotitis.—Fisher claims that septic parotitis is of hematogenous origin, and that cachexia and malnutrition, by lowering resistance, are predisposing factors. The secretion of the gland is under the influence of nerve stimuli, and the incidence of postoperative parotid involvement is neurologically dependent on surgical shock or inhibition of the secretory and trophic fibers from higher psychic centers. The gland must be susceptible to pyogenic micro-organisms, and when affected, bacteriemia exists in all cases. Early incision and drainage are indicated.

Experimental Study of Buried Bone.—The conclusions reached by Ely in former studies are confirmed, but this series indicates, in addition, that the bone and marrow of the buried fragment both die. The marrow is then reformed by blood vessels, pushing in from the surrounding tissues, and a certain amount of new bone is laid down on the old, especially along the margins of the trabeculae. The cartilage usually lives, but slowly becames eroded at its surface, and becomes thinner. Its buttress soon disappears. Raw bone resists absorption better than boiled bone, but it also is slowly absorbed.

Boston Medical and Surgical Journal

Dec. 11, 1919, **181,** No. 24

*Transmission of Influenza. J. P. Leake, Washington, D. C.—p. 675.
Bacteriology of Secondary Pneumonia. H. T. Chickering, New York.—p. 679.
Treatment of Influenzal Pneumonia by Convalescent Human Serum. W. R. Redden, U. S. Navy.—p. 687.
Surgical Treatment of Acute Empyema Following Influenza. W. Whitemore, Boston.—p. 692.

Transmission of Influenza.—The results of all human experiments with the Pfeiffer bacillus, with secretions, with direct exposure, with subcutaneous inoculation of filtered secretions and unfiltered blood, were entirely negative in the work reported on by Leake. Micrococci of the group found by Mathers as very frequent in the respiratory tract of influenza patients were similarly inoculated without result. A sudden outbreak of 215 cases of influenza furnished donors for other experiments which also were negative. Two men, however, developed acute follicular tonsillitis, and a strongly hemolytic streptococcus became the predominating organism in the throat. In one of these patients the symptoms resembled influenza nine hours after onset. Transfer was then made of his secretions to ten more volunteers. In all of these ten, with one exception, the strongly hemolytic streptococcus became the predominating colony, and five of the nine developed acute follicular tonsillitis about two days after inoculation. This other volunteer, five days after inoculation, suddenly began to have a headache, fever, prostration and cough, pains in the back, etc. At first his nasopharyngeal bacterial flora were not much altered but after several days of sickness, Pfeiffer's bacillus began to be the predominant organism. The donor from whom the patient was inoculated apparently had an acute follicular tonsillitis due to the hemolytic streptococcus (beta type) though he had in turn received secretions from true cases of influenza. Another set of ten volunteers received the secretions obtained from an uncomplicated case of influenza four hours after onset. All of these remained well except one, who after thirty-six hours began to have fever, pain in the back and chest, cough, anorexia, etc. The same bacteria were present after as before inoculation, but instead of the hemolytic streptococcus being predominant as at first, its place was taken by the Pfeiffer bacillus, which was second in importance before inoculation. Fifty-four hours after onset, an attempt was made to transfer the infection by means of secretions to the final group of fifteen volunteers, but without success. It appears from these experiments that influenza is transmissible by means of the nose and throat secretions of persons suffering from the disease, with the nose and mouth as portals of entry, but that such transmission is far from a uniform result of such exposure; the first twenty-four hours of the disease were the most favorable for this transmission. The customary measures for prevention are therefore reasonable.

Iowa State Medical Society Journal, Des Moines

Nov. 15, 1919, **9,** No. 11

Reconstruction Problem for Disabled Soldier. J. L. Porter, Chicago.—p. 365.
Blood Transfusion as Employed in an Evacuation Hospital in the Advance Zone, A. E. F. L. E. Shafer, Davenport.—p. 317.
Statistics of Rejections and Their Causes in Recent Draft. C. S. Grant, Iowa City.—p. 375.
Laboratory Service of Divisional Laboratories, L. A. Flitze, U. S. Army.—p. 378.
Work of Red Cross Organizations in Relation to Preventive Medicine of Future. A. Newsholme, London, England.—p. 382.

Journal of Biologic Chemistry, Baltimore

November, 1919, **40,** No. 1

Cephalin. VII. Glycerophosphoric Acid of Cephalin. P. A. Levene, and I. P. Rolf, New York.—p. 1.
Comparative Metabolism of Certain Aromatic Acids. III. Fate of P-Nitrophenylacetic Acid in Organism of Fowl, Dog and Man. C. P. Sherwin and M. Helfand, New York.—p. 17.
*Studies of Blood Regeneration. I. Effect of Hemorrhage on Alkaline Reserve. M. V. Buell, Madison, Wis.—p. 29.
*Id. II. Effect of Hemorrhage on Nitrogen Metabolism. M. V. Buell, Madison, Wis.—p. 63.
Animal Calorimetry. Influence of Lactic Acid on Metabolism. H. V. Atkinson, and G. Lusk, New York.—p. 79.
*Antiscorbutic Value of Banana. H. B. Lewis, Urbana, Ill.—p. 91.
*Determination of Carbon Monoxid in Blood. D. D. Van Slyke and H. A. Salvesen, New York.—p. 103.
Determination of Blood Volume by Carbon Monoxid Method. H. A. Salvesen, New York.—p. 109.
Determination of Catalase in Blood. M. Bodansky, Lakewood, N. J.—p. 127.
Action of Furfurol and Dextrose on Amino-Acids and Protein Hydrolysates. C. T. Dowell and P. Menaul, Stillwater, Okla.—p. 131.
*Heat Coagulation of Milk. H. H. Sommer and E. B. Hart, Madison, Wis.—p. 137.
*Action of Intravenous Injections of Pancreas Emulsions in Experimental Diabetes. I. S. Kleiner, New York.—p. 153.
Crystalline Guanylic Acid. P. A. Levene, New York.—p. 171.
A New Sterol: Mycosterol. T. Ikeguchi, Osaka, Japan.—p. 175.
Relative Accuracy of Colorimetric and Titrimetric Procedures for Determining Nitrogen as Ammonia. E. R. Allen and B. S. Davisson, Wooster, Ohio.—p. 183.
*Creatinuria in Infants. I. Relation of Creatinuria to Acidosis. Elimination of Ingested Creatine and Creatinine. J. L. Gamble and S. Goldschmidt, Baltimore.—p. 199.
*Id. II. Relation of Protein Intake to Urinary Creatine. J. L. Gamble and S. Goldschmidt, Baltimore.—p. 215.
Placental Feeding and Purin Metabolism. V. J. Harding and E. G. Young, Montreal, Canada.—p. 227.

Effect of Hemorrhage on Alkaline Reserve.—The blood examined by Buell was obtained without anesthesia from a spurting artery so that it only came in contact with the flask in which it was collected. When the animal remained perfectly quiet throughout the experiment, the drop in alkaline reserve was invariably small. If the animal struggled, the drop in alkaline reserve was much greater, this being noticeable soon after struggling took place. When the animal remained quiet, the maximum drop in alkaline reserve was reached within half an hour after the bleeding was completed. At the end of five hours, and often sooner, the alkaline reserve was near its original value. The total nitrogen content of the blood always fell immediately after hemorrhage. There was a distinct tendency for the urea nitrogen and the nonprotein nitrogen to rise. Although one animal was bled seven times while restricted to a diet of corn and water, the percentage of chlorids in the blood remained constant. On an inadequate diet (corn and water) under conditions of repeated hemorrhage there was a distinct tendency toward regeneration of blood proteins.

Effect of Hemorrhage on Nitrogen Metabolism.—The theory that hemorrhages amounting to 6 c.c. per pound of body weight are not necessarily accompanied by a severe grade of acidosis is supported by Buell's observations.

Antiscorbutic Value of Banana.—The value of the banana as an antiscorbutic in the treatment of experimental scurvy was investigated by Lewis. Guinea-pigs fed on an exclusive diet of bananas were unable to maintain their body weight and died in from twenty to thirty days. Bananas in amounts greater than 25 gm. daily, as supplement to a diet of rolled oats, prevented the onset of scurvy. Such a diet, however, does not protect against scurvy. These experiments suggest that a lower content of the antiscorbutic principle may be sufficient to protect against scurvy if the diet is adequate in its content of the other essential dietary constituents.

Determination of Carbon Monoxid in Blood.—Van Slyke and Salvesen have worked out a gasometric method which permits the determination of the carbon monoxid gasometrically in 2 c.c. of blood in the course of from ten to fifteen minutes. The technic is exactly the same as that previously described by Van Slyke for the determination of oxygen, except that after the gases are extracted the oxygen is absorbed in the apparatus by introducing alkaline pyrogallate solution. The carbon monoxid remains and is measured directly at atmospheric pressure.

Heat Coagulation of Milk.—Sommer and Hart found that the main factor in the heat coagulation of fresh milk is the composition of the milk salts. Apparently, casein requires a definite optimum calcium content for its maximum stability. The calcium content of casein is largely controlled by the magnesium, the citrates and the phosphates present. In fresh milk there is no relation between titratable acidity and heat coagulation. Acid fermentation in milk lowers the coagulating point by changing the reaction and by lowering the citric acid content. However, the titratable acidity of fresh milk samples varies so widely that it is impossible to determine the extent of acid fermentation by titration. Therefore, it is impossible to use the acidity of milk as a criterion of coagulability. Difference in concentration accounts partly for the difference in coagulation of fresh milk samples. Hydrogen ion concentration is not the determining factor in fresh milk coagulation. It is, nevertheless, a factor in fresh milks, and in commercial milks it may become an important factor.

Use of Pancreas Emulsions in Experimental Diabetes.—Diabetic dogs were given intravenous injections of unfiltered water extracts of fresh pancreas, diluted with 0.9 per cent. sodium chlorid solution. The preparation was administered very slowly and usually resulted in a marked decrease in the blood sugar. There was no compensating increase in urinary sugar, but rather a decrease, which may be owing partly to a temporary toxic renal effect. The result is regarded by Kleiner as further evidence for the internal secretion theory of experimental diabetes. The fact that these pancreas emulsions lower blood sugar in experimental diabetes without causing marked toxic effects indicates a possible therapeutic application to human beings, but further study of the problem is necessary.

Creatinuria in Infants.—The subjects of the experiments described by Gamble and Goldschmidt were infants obtained from a well conducted home for foundlings. One of them was a normal infant. The others failed to come up to the specifications for normal infants only in the respect that they were more or less underweight. There was in no instance a history of recent nutritional disturbance, or during the experimental periods, symptoms of malnutrition. They all made moderate or rapid gains in weight on the experimental diets. The diet was in all cases cow's milk. The results obtained show: first, that in the infant small amounts of ingested creatin lead to an increased urinary output; second, there is evidence that in infants the ingested creatin in nearly or completely eliminated during a period of several days. Third, from a comparison with experiments in the literature of the behavior of creatin ingested by adult men with the behavior in the infants studied, the following points are suggested: (*a*) smaller absolute amounts of ingested creatin lead to urinary excretion of creatin in infants than is the case with adult males: (*b*) ingested creatin is more completely excreted by the infant than by the adult male; (*c*) although the comparison presents greater difficulties of demonstration, there is an indication that, per kilogram of body weight, smaller quantities of ingested creatin lead to excretion of creatin in infants than in adult males.

Id.—On the assumption that preformed creatin in milk modifications is in proportion to the quantity of whey present, the results reported by Gamble and Goldschmidt suggest that the ingestion of creatin is probably a large factor in the creatinuria of infants fed on cow's milk.

Journal of General Physiology, Baltimore

Nov. 20, 1919, **2**, No. 2

Heliotropism of Onchidium: Problem in Analysis of Animal Conduct. W. J. Crozier and L. B. Arey, Chicago.—p. 107.
Combination of Enzyme and Substrate. I. Method for Quantitative Determination of Pepsin. II. Effect of Hydrogen Ion Concentration. J. H. Northrop, New York.—p. 113.
*Labyrinth and Equilibrium. I. Comparison of Effect of Removal of Otolith Organs and of Semicircular Canals. S. S. Maxwell, Woods Hole.—p. 123.
Studies on Bioluminescence. X. Carbon Dioxid Production During Luminescence of Cypridina Luciferin. E. N. Harvey, Princeton. —p. 133.
Studies on Bioluminescence. XI. Heat Production During Luminescence of Cypridina Luciferin. E. N. Harvey, Cleveland.—p. 137.
Isoelectric Points of Proteins in Certain Vegetable Juices. E. J. Cohn, J. Gross and O. C. Johnson, U. S. Army.—p. 145.
*Iodin and the Thyroid. IV. Quantitative Experiments on Iodin Feeding and Metamorphosis. W. W. Swingle, Princeton.—p. 161.
Influence of Concentration of Electrolytes on Electrification and Rate of Diffusion of Water Through Collodion Membranes. J. Loeb, New York.—p. 173.

Otolith Organs and Semicircular Canals.—The results of experiments have convinced Maxwell that the assumption of a sharp differentiation of function between the otolith bearing vestibular portions of the labyrinth and the semicircular canals is not justified by the facts. Between the effects of extirpation of the one and of the other set of structures there is more resemblance than contrast. They certainly reenforce each other, for the reactions produced by either one alone are always slower and less vigorous than when both sets of organs are intact. It would not, however, be safe to affirm that the functions are identical. In one respect a difference is apparent; namely, in the response to rotation in a horizontal plane. If the ampullae are uninjured, compensatory movements occur when the animal is rotated around its dorsoventral axis. Maxwell has never seen this reaction in the absence of the ampullae of the horizontal canals.

Iodin and the Thyroid.—Swingle holds the view that iodin will eventually take rank along with chlorin, phosphorus and other elements essential to the maintenance of normal metabolism, growth, and development. The almost universal ocurrence of a thyroid mechanism among the vertebrates for the assimilation and utilization of iodin in minute quantities, points to the conclusion that there is a definite iodin metabolism and that it is necessary for normal functioning.

Journal of Laboratory and Clinical Medicine, St. Louis

November, 1919, **5**, No. 2

*Studies on Irritable Heart: II. Etiology. L. M. Warfield, Milwaukee, and F. M. Smith, Chicago.—p. 75.
*Id. III. Value of Exercise in Diagnosis and Determination of Fitness of Irritable Heart for Military Service. L. M. Warfield, Milwaukee, and F. M. Smith, Chicago.—p. 81.
*Some Uses of Nonspecific Protein Therapy. W. Boyd, Winnipeg, Canada.—p. 89.
*Incidence of Syphilis Among White and Colored Troops as Indicated by an Analytical Study of Wassermann Results in Over Ten Thousand Tests. W. Levin, Parsons, Kan.—p. 93.
*Tonicity of Sphincter at Duodenal End of Common Bile Duct. F. C. Mann, Rochester, Minn.—p. 107.
Further Studies in Plasmogenesis. A. L. Herrera, Mexico City.—p. 110.
Sex Attraction. V. C. Vaughan, Ann Arbor.—p. 114.
A New Double-Way Syringe for Use in Intravenous Medication, Transfusion and Aspiration. H. O. Ruh, Cleveland.—p. 123.
A Device for Centrifugalization at Low Temperatures. W. H. Welker, Chicago.—p. 124.
A New Method for the Preservation of Specimens. J. S. Platzker, U. S. Army.—p. 126.
A Simple Laboratory Shaker. E. J. Warnick, Cleveland.—p. 128.
Quick Method for Making Small Inner Tubes for Dunham's Fermentation Tubes. E. M. Taylor, Le Mans, France.—p. 128.

Studies on Irritable Heart.—The authors prefer the name "irritable heart" to "effort syndrome." Many diseases and convalescence from many other diseases reveal practically the identical syndrome. However, the cases of true irritable heart have one factor not usually found in other cases showing a similar syndrome, that is history dating back years with no definite cause. The victims at times seem to be born with a constitutional inferiority. The least touch of the throttle races the engine. They seem unable to get into gear and carry the load. Exercise under observation is unquestionably the surest and quickest method of sorting the fit from the unfit. Graded exercise is also valuable in diagnosis between cases of irritable heart and pulmonary tuberculosis.

Nonspecific Protein Therapy.—Boyd has resorted to this form of therapy, using typhoid bacilli, in cases in which there is a chronic intoxication from some focus of infection which cannot be located or removed. The toxins may give rise to arthritis, myositis, neuritis, or iritis, depending on the organ whose resistance is below normal, but if the focus can be attached and the toxins neutralized, benefit will follow. In several cases of toxic iritis, infective arthritis and neuroretinitis, favorable results were obtained.

Incidence of Syphilis Among White and Colored Troops.—Based on the + + reactions alone, Levin found 10.5 per cent. syphilitics among the white and 18.3 per cent. among the colored soldiers. Considering the + reactions in this series also diagnostic, the percentage of syphilitics was 13.08 for the white and 24.1 for the colored soldiers. Estimate is made that the same and probably a higher percentage of syphilitics exists among the white and colored civilians from 21 to 31 years of age.

Sphincter at Duodenal End of Common Bile Duct.—The tone of the sphincter at the duodenal end of the common bile duct was studied by Mann in species of animals possessing a gallbladder and in two species in which the gallbladder is lacking. It was found that the tone of the sphincter under the experimental conditions studied varied considerably in the different animals and various species. In each species possessing a gallbladder, however, the sphincter was usually able to withstand a minimum pressure of from 75 to 100 mm. water. In the species lacking a gallbladder, the sphincter would not withstand pressure, or only pressures of less than 30 mm. water. While anatomic studies have shown that a sphincter is present in each species lacking a gallbladder, the sphincter does not seem to functionate appreciably.

Medical Record, New York

Oct. 11, 1919, **96,** No. 15

Necessity for Application of Differential Air Pressure in Thoracic Operations. W. Meyer, New York.—p. 617.
Outlook of Medical Practice. S. S. Sprigge, London, Eng.—p. 622.
*Vaccine as a Prophylactic Against Influenza, and Local Reaction as a Guide to Immunity. H. Greeley, Blooklyn.—p. 624.
Common Colds and Grippe. L. L. Bulkley, New York.—p. 627.
Commotional Shock Caused by Shell Explosions. A. Leri, Paris, France.—p. 628.

Vaccine as a Prophylactic Against Influenza.—Greeley notes his experience from the use of a vaccine comprising seventeen "strains," or cultures of the influenza bacillus (Pfeiffer's) from as many different cases. A large group of nonimmune children, exposed to the infection in an attack, and no further cases of the disease occurred in the institution.

Minnesota Medicine, St. Paul

December, 1919, **2,** No. 12

Reconstruction in Medical Education. G. D. Head, Minneapolis.—p. 455.
Intracapsular Extraction of Cataracts. W. L. Benedict, Rochester, Minn.—p. 461.
*Treatment of Burns. G. E. McGeary, Brown's Valley.—p. 567.

Treatment of Burns.—The preparation used by McGeary is of a waxy consistency with a melting point of 120 F. The formula is: resorcinol, 10 parts; oil of eucalyptus, 20 parts; olive oil, 50 parts; petrolatum, 250 parts; paraffin, 670 parts. Melt petrolatum and paraffin together. Dissolve the resorcinol in alcohol and add to the petrolatum-paraffin mixture while it is hot, to drive off the alcohol. When cool, add the eucalyptus and olive oil.

Missouri Medical Association Journal, St. Louis

December, 1919, **16,** No. 12

Nerve Suture. F. Reder, St. Louis.—p. 399.
*Physiopathology of Intestinal Obstruction. E. P. Hamilton, Kansas City.—p. 402.
*Influenza in Children in St. Louis. J. Zahorsky, St. Louis.—p. 407.
Influenzal Pneumonia at Barnes Hospital from October, 1918, to March 6, 1919. R. L. Murdock and J. R. Dean, St. Louis.—p. 411.
Roentgenologic Findings in Influenza and Pneumonia. C. E. Gilliland, St. Louis.—p. 413.
Treatment of Hemorrhoids. C. Smith, St. Louis.—p. 417.
Care of Eye, Ear, Nose and Throat in General Practice. J. P. McCann, Warrensburg.—p. 419.
*Round Cell Sarcoma of Arm. J. G. Montgomery, Kansas City.—p. 421.

Intestinal Obstruction.—This paper was abstracted in THE JOURNAL, June 28, 1919, p. 1930.

Treatment of Influenza in Children.—In the treatment of influenza in children, Zahorsky favors sodium benzoate, and, as there is a marked tendency to acidosis, he adds potassium citrate, about 4 grains of each drug per dose every two hours. As a rule, quinin was prescribed in the severe cases and seemed to be of service in lowering the temperature. Intramuscular injections of quinin were used in two cases. For the distressing cough, paregoric or codein were occasionally prescribed. In all children showing considerable prostration camphor was used as a stimulant. It was generally prescribed in the form of spirits of camphor, and from 5 to 15 drops diluted with milk were administed several times a day. In a few cases the neutral camphor in oil was given hypodermically. Coffee and tea also were frequently used as stimulants. In one serious case of pneumonia, the principal stimulant was caffein, given hypodermically. The treatment in these cases was guided by the theory that the child had to produce certain antibodies. For this purpose it needed rest, fresh air, food and light. Zahorsky did not use vaccines.

Round Cell Sarcoma of Arm.—In Montgomery's case several points are emphasized: (1) the sarcoma of the humerus apparently developed after a trauma, and (2) there was also an osteomyelitis of the humerus; (3) a four plus Wassermann was present, but treatment with potassium iodid and mercury had no effect. Therefore, Montgomery concludes that the Wassermann by itself is of no clinical consequence.

New York Medical Journal

Nov. 22, 1919, **110,** No. 21

Treatment of Bladder Growths by Electricity. B. A. Thomas, Philadelphia.—p. 833.
*Ambulatory Treatment of Fracture of Neck of Femur. E. H. Bradford, Boston.—p. 835.
Laryngeal Bouginage. H. L. Lynah, New York.—p. 838.
Duty of the Strong to the Weak Poor. E. Souchon, New Orleans.—p. 844.
Hysteria Simulating Brain Tumor. I. S. Wechsler, New York.—p. 845.
Submucous Resection Operation. M. Lubman, New York.—p. 847.
Case of Acute Pulmonary Abscess. Treated with Artificial Pneumothorax. W. D. Tewksbury, Washington, D. C.—p. 849.
Spasmophilic Child. J. Epstein, New York.—p. 851.
Malarial Splenomegaly in France. C. G. Cumston, Geneva, Switzerland.—p. 853.

Ambulatory Treatment of Fracture of Neck of Femur.—The abduction traction apparatus described by Bradford is a modification of the well known Thomas knee splint, to which is added a traction attachment and also a curved padded rod which gives bearing on the descending ramus of the unaffected side and is bent in such a way as to secure proper abduction. The splint was devised and has been long in use at the Boston Children's Hospital and the Massachusetts Hospital School at Canton as an ambulatory apparatus for the treatment of hip disease. Experiments have shown that as great or greater amount of fixation can be secured by this form of apparatus than by a plaster spica. The apparatus is fitted without difficulty and causes but little discomfort, permitting, if properly shaped, the use of the bedpan without removing the spint. As there are no perineal straps which can be loosened, the apparatus, when applied, is reasonably secure. The apparatus is made with no greater difficulty than the ordinary Thomas knee splint.

With properly applied traction the fragments can be kept in correct position and riding upward is prevented. The results obtained by Bradford in the cases treated with the abduction traction splint lead him to recommend this form of treatment in a large number of cases in this type of injury.

Ohio State Medical Journal, Columbus

Dec. 1, 1919, **15**, No. 12

*Venereal Diseases. H. N. Cole, Cleveland.—p. 738.
*Fractures of Pelvis and Their Complications. C. E. Caldwell, Cincinnati.—p. 798.
Advantages of Ether-Oxygen Anesthesia. A. S. McCormick, Akron.—p. 801.
Importance of Birth and Death Bookkeeping. J. E. Monger, Columbus.—p. 804.
First Stage in Renal, Vesical and Prostatic Surgery. E. H. Harsh, Cleveland.—p. 807.
Insanity; Influence on Society and Methods of Control. E. A. North, Cincinnati.—p. 810.

Venereal Disease.—Some of the points stressed by Cole are: Do not use injections at the beginning of a gonorrhea—rather treat it as an acute inflammation. Plenty of water and rest in bed are of great value in acute gonorrhea. Do not give alkalis. Clinical diagnosis of chancres is not enough. Substantiate them with dark field illuminator or Wassermann tests or both. Do not wait for a secondary eruption. A negative Wassermann on the blood in an old case of syphilis is not sufficient. Examine the spinal fluid also. The patient taking treatment for syphilis should have frequent examination of the urine to ward off nephritis.

Fractures of Pelvis and Their Complications.—In cases of pelvic fracture Caldwell has never found any other methods of fixation necessary than can be obtained with well adjusted sand bags and adhesive plaster strapping. Buck's extension may be used in cases of double vertical fracture with overriding of the fragments.

Pennsylvania Med. Journal, Chicago, and Athens, Pa.

November, 1919, **23**, No. 2

*Community Sanitation as Based on Knowledge of Camp Sanitation. W. G. Turnbull, Cresson.—p. 47.
*Work of Sanitary Engineer in Pennsylvania Department of Health. C. A. Emerson, Jr., Harrisburg.—p. 49.
Physical Findings of Pennsylvania Men in Draft. W. G. Murdock, Harrisburg.—p. 51.
Present Views Concerning Sympathetic Ophthalmia. W. Zentmayer, Philadelphia.—p. 55.
*Pulse Pressure in Traumatic Cerebral Compression. H. M. Armitage, Chester.—p. 58.
Surgical Treatment of Carcinoma of Stomach. H. F. Smith, Harrisburg.—p. 61.
Empyema. J. S. Rodman, Philadelphia.—p. 65.
*Fractures of Pelvis. S. P. Mengel, Wilkes-Barre.—p. 70.

Community Sanitation as Based on Knowledge of Camp Sanitation.—This paper was abstracted in The Journal, Nov. 1, 1919, p. 1387.

Work of Sanitary Engineer in Pennsylvania Department of Health.—This paper was abstracted in The Journal, Nov. 1, 1919, p. 1387.

Pulse Pressure in Traumatic Cerebral Compression.—This paper was abstracted in The Journal, Nov. 1, 1919, p. 1388.

Fractures of Pelvis.—This paper was abstracted in The Journal, Nov. 1, 1919, p. 1388.

Southwest Journal of Medicine and Surgery, El Reno

November, 1919, **27**, No. 11

Surgical Responsibility. J. D. Griffith, Kansas City.—p. 242.

Southwestern Medicine, El Paso, Texas

November, 1919, **3**, No. 11

Foreign Body Injuries to the Eyes; Localization and Removal of Foreign Bodies. A. Martin and W. W. Watkins, Phoenix, Ariz.—p. 1.
Splenomyelogenous Leukemia. B. L. Sweet.—p. 19.

Surgery, Gynecology and Obstetrics, Chicago

December, 1919, **29**, No. 6

*Treatment of Placenta Praevia by Conservative Measures. G. W. Kosmak, New York.—p. 525.
*Study of Frozen Sections of Pelvis; Description of Operation for Pelvic Prolapse. A. B. Spalding, San Francisco.—p. 529.
Ovarian Residue. W. P. Graves, Boston.—p. 537.
Age Distribution and Age Incidence in Five Hundred Cases of Cancer of Uterus. R. Peterson, Ann Arbor.—p. 544.
*Elective Cesarean Section. E. P. Davis, Philadelphia.—p. 554.
Relation of Preventive Medicine to Gynecology. H. P. Newman, San Diego.—p. 557.
*Etiology of Tubal Pregnancy. G. B. Miller, Washington.—p. 560.
*Toxic Effects of Fibroid Tumors of Uterus. R. R. Huggins, Pittsburgh.—p. 561.
Origin of Intrapelvic Treatment of Stump After Supravaginal Hysterectomy for Fibroid Tumor of Uterus; to Whom Belongs the Credit? J. R. Goffe, New York.—p. 567.
*Actinomycosis of Both Ovaries and Fallopian Tubes. M. R. Robinson, New York.—p. 569.
Ruptured Uterus Occurring Twice in Same Patient. E. L. Cornell, Chicago.—p. 574.
Abruptio Placentæ Associated with Spontaneous Rupture of Uterus, Report of Two Cases. L. F. Phaneuf, Boston.—p. 575.
*Temporary Sterilization of Female. A. Turenne, Montevideo, Uruguay.—p. 577.
Torsion of Spermatic Cord; Report of Two Cases and Review of Literature. V. J. O'Connor, Boston.—p. 580.
Ureteral Occlusion: Its Relation to Renal Lesions. H. G. Bugbee, New York.—p. 585.
Congenital Depressions, Sinuses and Cysts Occurring in Sacrococcygeal Region. R. W. McNealy, Chicago.—p. 593.
Secondary Wound Closure. A. G. Brenizer, Charlotte, N. C.—p. 596.
Ambulatory Braces in Treatment of Fractures and Injuries of Lower Extremities. H. R. Conn, U. S. Army.—p. 598.
*Interstitial Transplant of Round Ligaments in Treatment of Selected Cases of Uterine Retroversion. Y. Wardlow, Columbus, Ohio.—p. 603.
Removal of Machine Gun Bullet from Sacral Canal. K. Bulkley, New York, and H. M. Bergamini, M. C., U. S. Army.—p. 606.
Some Aids in Technic of Blood Transfusion by Paraffin Tube Method. T. P. Shupe, Cleveland.—p. 608.
Pre-Operative and Postoperative Treatment to Prevent Recurrence of Stone Following Nephrolithotomy. A. J. Crowell and R. Thompson, Charlotte, N. C.—p. 609.
Chronic Abscess of Prostate Cured by Intra-Urethral Procedures. P. W. Aschner, New York.—p. 610.
Coccygodynia. F. C. Yeomans, New York.—p. 614.

Treatment of Placenta Praevia.—This paper was abstracted in The Journal, July 12, 1919, p. 140.

Operation for Pelvic Prolapse.—This paper was abstracted in The Journal, July 12, 1919, p. 140.

Elective Cesarean Section.—This paper was abstracted in The Journal, July 12, 1919, p. 140.

Etiology of Tubal Pregnancy.—Miller believes in a causal relation between the taking of oxytocics, and, perhaps, the other measures commonly employed in the production of any early abortion, and tubal pregnancy.

Toxic Effects of Fibroid Tumors of Uterus.—This paper was abstracted in The Journal, July 12, 1919, p. 140.

Actinomycosis of Both Ovaries.—Robinson cites a case in which an operation was followed by recovery, and presents a tabulation of all the cases of actinomycosis of the female genitalia recorded in the literature.

Temporary Sterilization of Female.—Turenne sutures the fimbriated end of the tube into a pocket made in the broad ligament. With this technic, he says, one can be certain of being able later to do a salpyngostomy with ease and to adjust the opening to the ovary as in the classic salpyngo-ovaropexy.

Interstitial Transplantation of Round Ligaments.—Wardlow describes his method of operation by which the round ligaments are transplanted into the anterior wall of the fundus of the uterus.

U. S. Naval Medical Bulletin, Washington, D. C.

Supplement for the Hospital Corps

October, 1919, No. 11

Immunity. R. H. Laning, U. S. Navy.—p. 7.
In Santo Domingo with U. S. Marines. L. C. Haspel, U. S. Navy.—p. 12.
Molecules, Ions, Atoms, Electrons. C. W. Cuno, Yankton College, S. D.—p. 35.
Naval Hospital Corpsmen in Action with Marines. J. T. Boone, U. S. Navy.—p. 41.
Instruction of Hospital Corps Aboard Ship. W. S. Pugh, U. S. Navy.—p. 59.
Roentgen-Ray Tube; Its Construction and Operation. C. E. Snider, U. S. Navy.—p. 67.
Impressions of Course of Special Instruction at School for Naval Pharmacists, Hampton Roads, Va. N. L. Saunders, U. S. Navy.—p. 70.
Sanitary Garbage System. H. W. Elliott, U. S. Navy.—p. 73.
Sick Bay de Luxe. A. J. Heuschling, U. S. Navy.—p. 74.
Naval Medical Exhibit—Meeting of the American Medical Association, Atlantic City, June 9-13, 1919. J. T. Cassady, U. S. Naval Reserve Force.—p. 77.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Nov. 29, 1919 ,2, No. 3074

Preventive Treatment in Influenza. T. Horder.—p. 695.
Normal and Morbid Conditions of Testes from Birth to Old Age in One Hundred Asylum and Hospital Cases. F. W. Mott.—p. 698. To be cont'd.
*Surgical Treatment of Facial Paralysis. G. Fenwick.—p. 700.
Obstetrics: Past Present and Future. A. Stookes.—p. 701.
*Experiments on Destruction of Lice and Nits. A. Bacot and G. Talbot. —p. 703.
*Radium in Treatment of Tuberculous Adenitis. E. S. Molyneux.—p. 704.
Fatal Cerebral Hemorrhage at Thirty-Four Years of Age. A. B. Fearnley.—p. 706.

Surgical Treatment of Facial Paralysis.—Fenwick reports a case in which one slip of temporal muscle was inserted into the orbicularis palpebrarum and another slip was inserted into the orbicularis oris to restore lost motion to the eyelid and the lip in these cases.

Destruction of Lice and Nits.—The experiments recorded by Bacot and others, in which sodium chlorid, compound solution of cresol, cresol and kerosene were used, showed that the degree of temperature is the important thing in the delousing process, not the chemical.

Radium in Treatment of Tuberculous Adenitis.—Molyneux is convinced that radium is, if properly used, a safe and certain cure, whether for an early or an advanced case of tuberculous glands. He treated between twenty and thirty cases of every grade with radium. In every case the swellings and even old sinuses faded away. Unless there were already sinuses present, no scars were left. The skin in some instances was a little red for a few weeks from the action of the radium, but this always disappeared. In no case was any ulceration caused.

Japan Medical World, Tokyo

Nov. 9, 1919, No. 308

Migration of Sewing Needles in Human Body. R. Miyata.
Cytologic Study on Internal Secretion of Human Placenta and Decidua. G. Fujimura.
Phosphorus in Urine of Rabbit Treated with Toxins Acting Against Brain Tissues. S. Tsuchiya.
*Injection of Oxygen Under Skin. Y. Ozaki.

Injection of Oxygen Under Skin.—In cases in which oxygen is needed, Ozaki injects from 200 to 500 c.c. subcutaneously in the intrascapular region or the inner side of thighs.

Journal of State Medicine, London

November, 1919, **27**, No. 11

General Principles of Housing and Town Planning in Relation to Health. E. W. Hope.—p. 321.
Housing Problems in Rural Districts. W. G. Savage.—p. 327.
Tuberculosis Problem Under After-War Conditions with Reference to Canada. W. M. Hart.—p. 336.

Journal of Tropical Medicine and Hygiene, London

Nov. 15, 1919, **22**, No. 22

*Simple Method of Mounting and Preserving Insects, Etc. A. Moore. —p. 205.

Simple Method of Mounting and Preserving Insects.—Moore describes a method by means of which each insect is enclosed in a separate, flat, transparent chamber, hermetically sealed, so that destructive agents of all kinds are excluded from gaining entrance and the specimen itself is prevented, as far as possible, from giving off its natural moisture and thus becoming completely shriveled up.

Kitasato Archives of Experimental Medicine, Tokyo

October, 1919, **3**, No. 2

*Leukocytogregarine of Wild Rat; Special Reference to Its Life History. S. Kusama, K. Kasai and R. Kobayashi.—p. 103.
*Bruck's Reaction and Its Comparison with Wassermann's Reaction. M. Terada.—p. 123.
Rat-Bite Fever Spirochete, with a Comparative Study of Human, Wild Rat and Field Vole Strains. S. Kusama, R. Kobayashi and K. Kasai.—p. 131.
*Experimental Immunologic Tests of Anti-Influenza Serum. S. Umeno, Y. Watanabe and T. Sato.—p. 151.
Experimental Study on Life-History of Sparganum Mansoni Cobbold. T. Okumura.—p. 191.

Leukocytogregarine of Wild Rat.—The parasite described by the authors is believed to be similar to *Leukocytozoon muris*, Balfour, *L. ratti, adie*, etc., and possesses many resemblances to *Hepatozoon perniciosum*, Miller. Numerous well made illustrations and a very comprehensive bibliography form a part of this article.

Comparative Value of Bruck and Wassermann Reactions.—One hundred and fifty serums of syphilitic and nonsyphilitic patients, whose cases were clinically diagnosed, were used by Terada in his investigations. Both reactions corresponded in 77.3 per cent. of the cases. In the primary stage of syphilis, Wassermann's reaction was positive in 75 per cent. of the cases; Bruck's reaction was positive in 50 per cent. In the secondary stage of syphilis, the Wassermann was positive in 88 per cent. and the Bruck in 85.5 per cent. of the cases. In the tertiary stage the Wassermann was positive in 86.6 per cent. of the cases, and the Bruck in 80 per cent. of the cases. In cases in which the presence of syphilis was very doubtful, Wassermann's reaction was positive in 39.5 per cent. and Bruck's reaction was positive in 40.1 per cent. In nonsyphilitic cases the former was positive in 12.5 per cent. and the latter in 25 per cent. Bruck's reaction always showed a smaller positive percentage than Wassermann's in each stage of syphilis, while Bruck's reaction always indicated a higher positive percentage than Wassermann's in nonsyphilitic cases. Wassermann's reaction was negative in all cases which had been submitted to arsphenamin injections several times, while Bruck's reaction was positive in two cases among eight. When Bruck's reaction was intensively positive, Wassermann's reaction was strongly positive in many cases, but not always. Owing to the simplicity of the technic and the ease with which Bruck's test can be made, Terada recommends this reaction as an aid in the diagnosis of syphilis when a complicated method, such as Wassermann's cannot be used. However, the decision of a serious question, such as the diagnosis of syphilis, should never depend on Bruck's reaction alone.

Experimental Immunologic Tests of Anti-Influenza Serum.—Influenza immune horse serum was tested by the authors as to its immunologic properties and found to contain certain immune bodies which normal horse serum does not contain. Influenza immune horse serum possesses chiefly antitoxic instead of antibacterial properties. The supernatant fluid of a blood broth culture of influenza bacilli contains soluble toxin, which causes immediate death in experimental animals, while the precipitated bacillary bodies contain the endotoxin which causes hemorrhagic inflammation. Influenza immune horse serum has an antitoxic power against soluble toxin, and very likely also against bacillary toxin. Remarkably satisfactory results have been obtained by the practical application of the serum during the recent influenza epidemic.

Lancet, London

Nov. 29, 1919, **2**, No. 5022

*Physical Defects Among General Male Population Based on Ten Thousand Recruit Examinations. J. D. Comrie.—p. 957.
Treatment of Antral Suppuration. S. Hastings.—p. 960.
Ophthalmic Physicians and Advancement of Ophthalmology. B. D. Batten.—p. 962.
*Value of Complement Fixation Test in Gonococcal Infections. H. B. F. Dixon.—p. 964.
*Late Complications of Gunshot Wounds of Chest. J. B. McDougall. —p. 968.
*Influenza Epidemic. M. H. Smith and M. J. Saunders.—p. 975.
Myalgic Pains. J. M. Taylor.—p. 976.
*Modified Operation for Scrotal Varicocele. S. H. Meaker.—p. 973.

Physical Defects Among Male Population.—Comrie's observations would seem to indicate that physical defects worthy of note are present in four fifths of the adult male population. Many of these develop after the age of 18 years; thus three men out of four are fit for general military service at the age of 18, but only two out of four at the age of 23. Many of the defects are preventable or curable—for example, defective teeth, in 20 per cent., varicose veins in 5 per cent.,

hernia in more than 3 per cent., deformities of limbs in 7 per cent., skin diseases in 3 per cent.

Complement Fixation Test in Gonorrhea.—Eight hundred and forty tests were made by Dixon and Priestley on 625 persons sent from both gonorrhea and syphilis wards. Of 53 strong positives, 90.4 per cent. agreed clinically or in history; of 66 moderate positives, 86.3 per cent. agreed clinically or in history; of 75 weak positives, 72.0 per cent. agreed clinically or in history; of 90 doubtfuls, 58.9 per cent. agreed clinically or in history; of 341 negatives, 26.1 per cent. agreed clinically or in history. Twenty-six and one-tenth per cent. of the negatives were cases of gonorrhea or with a history of gonorrhea. Only one case of known gonorrhea remained negative on second test. The authors emphasize that in diagnosis a positive result is strongly indicative of active gonococcal infection. A single negative is of no value, but a second negative in two to three weeks is strong presumptive evidence of absence of infection. Patients doing well show a positive reaction by the ninth or tenth week, which soon begins to fall, such fall coinciding with clinical improvement. Cases in which a strong positive reaction is maintained over several weeks still have an active focus. The administration of detoxicated vaccine in doses of 1,000 millions or more produces an artificial power of fixing complement, which, however, does not necessarily mean any improvement in the patient's condition. In such cases, the complement fixation test is of no value. The complement fixation test should prove of the greatest value in the diagnosis of obscure pelvic diseases in women, so often the result of gonorrhea.

Gunshot Wounds of Chest.—McDougall's experience differs in no way from that of others who have found that the number of persons developing evidences of tuberculosis after chest wounds is exceedingly small. Out of a total number of 1,782 cases of old chest wounds collected from the literature, definite signs of tuberculosis supervened in five, that is, 0.28 per cent.

Treatment of Influenza.—The medical officers at Portland prison treated all the influenza patients with sodium salicylate, ipecac and aromatic spirits of ammonia during the pyrexial stage and tonics during convalescence. Complications were treated as they arose.

Modified Operation for Scrotal Varicocele.—On the basis that the removal of veins is never necessary for the relief of physical symptoms provided the testicle be adequately suspended, Meaker restricts his efforts almost wholly to suspending and supporting the testis. This is accomplished by shortening or reefing the cremaster so that the top of the testicle is brought to the level of the root of the penis. This is accomplished by eight interrupted sutures of fine catgut, and making no attempt to bring the ligated ends together. The next step is the shortening of the cremaster.

Medical Journal of Australia, Sydney

Nov. 1, 1919, **2**, No. 18

After-Effects of Gas Poisoning, with Special Reference to Lung Lesions. S. O. Cowen.—p. 369.
Pulmonary Fibrosis After Gassing. Roentgen-Ray Findings. C. E. Dennis.—p. 372.
*Case of Lymphosarcoma of Both Suprarenals. G. H. Burnell.—p. 373.
Amyotonia Congenita. E. W. Fairfax.—p. 374.
Case of Raynaud's Disease. E. W. Fairfax.—p. 375.
Chronic Ulcers of Stomach and Duodenum. J. Morton.—p. 375.

Case of Lymphosarcoma of Both Suprarenals.—Aside from the fact that both suprarenals were the seat of a tumor, the point of special interest in Burnell's case was the fact that clinically it resembled a case of intussusception, and the patient was operated on for this supposed condition. The tumors were discovered at the necropsy.

National Medical Journal of China, Shanghai

September, 1919, **5**, No. 3

Spindle Cell Sarcoma of Arm. J. W. H. Chun, Harbin.—p. 146.
Treatment of Influenza. K. Gronstedt, Stockholm.—p. 153.
Medical Ethics. F. Clark.—p. 156.
Prevention of Bubonic Plague. S. M. Woo.—p. 161.
Temple of Medicine in Peking. W. Lien-Teh.—p. 168.
Photo of a Chinese Mummy in Mongolia. W. Lien-Teh.—p. 171.

Archives Médicales Belges, Brussels

July, 1919, **72**, No. 7

*Cyclopean Microphthalmos. G. Van Duyse.—p. 1. Conc'n.
*Cervical Ribs. M. Dubois.—p. 40.
*Treatment of Ulcerating Cicatrix. Derache.—p. 60.
*Testicle Implantation. J. Voncken.—p. 64.

Cyclopean Microphthalmos.—See summary of Van Duyse's article on page 1963 of the last volume.

Cervical Ribs.—Dubois reports three cases, but the disturbances from the supernumerary ribs were not pronounced enough to warrant operative interference. Two of the patients were men of 39 and 60, with pains and impotence in one arm. They had been noted for six months in one case and twenty years in the older man. He was a pianist and could not play for more than half an hour at a time. There was a pair of cervical ribs in this case. The third patient was a woman of 29, and a pair of cervical ribs had induced the complete Claude Bernard-Horner syndrome. The condition was found unaltered when reexamined six years later. The diagnosis of cervical ribs is generally made only by exclusion but roentgenoscopy confirms it. Pains, atrophy, circulatory disturbances and paresthesias should suggest a supernumerary rib, especially when the smaller muscles of the hand are affected; or there may be symptoms suggesting paralysis of the cervical sympathetic. He reviews the literature on operative intervention.

Ulcerating Cicatrix.—Derache describes his success in curing chronic suppuration when a war wound has ulcerated after apparent healing. In seven cases he made incisions around the cicatrix, in sound tissue, cutting down through the subcutaneous layers, and sometimes making a double row of these circumferential incisions. This technic has proved its usefulness for old varicose ulcers.

Testicle Implantation.—Voncken reviews what has been accomplished in this line, citing Lydston's work and Steinach's experimental research, the clinical case reported by Steinach and Lichtenstern, and Rohleder's experimental and clinical experiences with treatment of homosexual perversion. He then describes Voronoff's "painstaking experimental research carried on for more than a year at the Collège de France. He studied on sheep and goats the influence of transplantation of testicle tissue. He found it easy to follow by the external manifestations the changes in the functioning of the internal secretion of the testicles." Castration of a young goat arrested the development of the horns. He conducted three series of experiments: In the first series, testicle implantation in the young castrated animals restored in a short time their normal vigor. The growth of the horns, arrested by the castration, began anew as soon as the implant had grown into intimate connection with the adjacent tissues. In his second scries of experiments implantation of testicle tissue in females transformed their character: Gravid goats were delivered normally, but they exhibited marked repulsion for suckling their young and other maternal cares. The testicle implant seemed to stifle all the instincts of maternal affection. In his third set of experiments, he implanted the testicle tissue in rams and goats 14 to 15 years old. This age in these animals corresponds to the human age of 65 to 70. The senile animals, with sluggish reactions, underwent a radical transformation within periods ranging from a few days to three weeks after the implantation of the testicle graft. Voncken emphasizes that the photographs which Voronoff exhibited with his report at the recent Congrès de chirurgie at Paris testified most significantly to the truth of his statements. One of the goat bucks impregnated a female.

"Counter experiences were equally significant," he adds, "removal of the graft reducing the animal to his former senile condition. A new implantation restored anew *les avantages de la jeunesse.* In view of such an ensemble of facts," Voncken comments, "can one doubt further the preponderant influence of the internal secretions of the testicle on senile phenomena?" He adds that Voronoff's histologic study of the grafts showed that the vessels growing into the graft do not reach the center in time to perpetuate its vitality. The center dies and is resorbed; only the periphery

retains its vitality. Hence small grafts take better than large ones. He only succeeded in keeping two alive out of thirty whole testicles implanted, while the partial grafts were constantly successful. A number of small grafts can be implanted under the skin in any part of the body, or in the peritoneal cavity, or under the vaginalis in the scrotum. He found this latter technic the most reliable. Voncken adds that Lydston's experience has given a practical confirmation of the experimental results thus realized in the laboratory. "Organotherapy is invading more and more the different chapters of pathology, and this surgical opotherapy seems to augur a fruitful future which is only the natural sequence of the marvelous results already realized with transfusion of blood." He suggests the possibility that grafts of thyroid tissue might be used in treatment of cretinism. "With any endocrine insufficiency, some harmless surgical intervention might definitely restore the organic balance." (Voronoff's report of improvement in a case of myxedema after implantation of monkey thyroid tissue was summarized in THE JOURNAL, Aug. 29, 1914, p. 810.)

Archives Mens. d'Obstétrique et de Gynécologie, Paris

August, 1919, **8**, No. 8

The Hemostatic Apparatus of the Human Uterus.—This issue of the *Archives* is accompanied with a set of nineteen fine plates which were omitted by mistake from Keiffer's article on this subject in the issue for June, 1919.

*Hysterectomy with Suppurating Adnexa. J. L. Faure and L. Bégouin.—p. 417.
System for Care of Prospective and Nursing Mothers at the Creusot Factories. M. Bourret.—p. 448.
*Roentgen Treatment of Uterine Fibroma. Béclère.—p. 453.

Hysterectomy with Suppurating Adnexa.—Faure and Bégouin say that each surgeon has his own method, but these methods often conflict with the laws which fifteen years of experience have impressed on them. With virulent lesions, the pelvis scattered with pus pockets, the patient feverish, vaginal hysterectomy may work a miracle when abdominal hysterectomy would be too risky. Under other conditions, abdominal hysterectomy is called for whenever there is bilateral adnexitis rebellious to medical measures, becoming chronic, and causing pain and other disturbances. Even when direct inspection fails to reveal any lesions in tube or ovary on one side, if they are painful, they should be removed with their suppurating mates, unless the patient prefers to take the chance of a second operation later. In the majority of cases, the cervix is not diseased enough to warrant its removal. Leaving the cervix simplifies the hysterectomy materially. The adhesions that form around the suppurating adnexa are high up in the pelvis, and the depths of the pouch of Douglas are generally free, so that planes of cleavage there allow the easiest means of working the adnexa loose. They can also be readily detached from the broad ligament in front of them. The adnexa should thus be attacked from below upward, from the front backward, and from within outward. This not only facilitates detaching the adnexa but there is less danger of injuring the ureters. Section of the cervix is the key to the whole procedure, as this is the lower pole of the fused uterus-adnexa mass. Hemisection of the uterus may be advisable besides, in difficult cases. They give six illustrations showing the various methods to meet varying conditions.

Roentgen Treatment of Uterine Fibromas.—Béclère concludes from his 400 cases of roentgen-treated uterine fibromas that, aside from certain conditions which imperiously demand surgical intervention, roentgen therapy is applicable to all fibromas of the uterus, without restrictions of any kind. His experience has demonstrated that radiotherapy arrests the development and induces more or less complete retrogression before 40 as well as after 40, with large as well as with small fibromas, and in women with normal menstruation as well as with excessive uterine hemorrhages. He gives weekly exposures with moderate doses. The rays are applied in turn from the right and left of the median line, just above the horizontal ramus of the pubis. If the tumor is very large, more fields may be exposed. Each exposure is limited to a circular surface 10 cm. in diameter, through a leaded glass cylinder, resting on a thin disk of wood. The rays are filtered through 5 mm. aluminum; the dose for each field is 3 H. units. In 60 per cent. of the cases from 12 to 14 weekly exposures were required; in only six cases from 31 to 50. In the more favorable cases the upper pole of the fibroma shrinks down nearer the pubis by 1 cm. a week. This shrinking in size is usually apparent by the third and sometimes by the second exposure.

Bulletin Médical, Paris

Nov. 22, 1919, **33**, No. 52

*Vaccine Therapy of Meningitis. H. Méry and L. Girard.—p. 691.

Vaccine Therapy of Meningitis.—Méry and Girard report a case of recovery from severe and protracted meningitis with septicemia, otitis of the internal ear and intolerance for the antiserum. They ascribe their success to an autogenous vaccine, all other treatment suspended. They say that this case teaches the wisdom of combining the antiserum with vaccine therapy in all cases of meningitis from the start.

Bulletins de la Société Médicale des Hôpitaux, Paris

Oct. 31, 1919, **43**, No. 30

The Sphygmotensiophone for Auscultation of Blood Pressure. C. Vaquez and H. Laubry.—p. 899.
*The Skull in Paget's Disease. P. Marie and A. Léri.—p. 901.
*Syringomyelia with Paget's Disease. Idem.—p. 904.
*Hippocratic Fingers. F. Regnault.—p. 907.
*Local Serotherapy of Gonococcus Rheumatism. R. Debré and J. Paraf.—p. 908.
*Case of Gonococcus Polyarthritis. H. Dufour, and others.—p. 918.
Atypical Spirochete Jaundice. M. Villaret and others.—p. 920.

Paget's Osteitis.—Marie and Léri describe peculiar anomalies found in the skull in persons who have had Paget's disease.

The same writers report further the unexpected discovery of extensive syringomyelia at necropsy in a case of Paget's disease. They theorize to explain this by mechanical factors.

Hippocratic Fingers.—The nails had grown to assume this type during the months an arteriovenous aneurysm had been forming in the upper arm.

Serotherapy of Gonococcus Arthritis.—Debré and Paraf say that the experiences with local serotherapy in meningitis encourage similar local measures in gonococcus arthritis. They found that intra-ocular injection of anti-gonococcus serum promptly cured the lesions induced by direct injection of gonococci into the anterior chamber of the rabbit eye. The account of their experimental anti-gonococcus serotherapy is soon to appear in the *Annales de l'Institut Pasteur*. The results were so encouraging that they injected the antiserum in 15 patients with different forms of recent gonococcus rheumatism. These cases are described in detail; in all the joint disease was severe, and without the local serotherapy would have probably terminated in ankylosis after weeks of fever and pains. In 6 cases the cure was complete in less than eight days; in 8 others before the fifteenth day. In all these 14 the joint functioning was normal. In one case no benefit was derived. The woman was pregnant and in bad general condition.

They punctured the joint and injected the antiserum in place of the evacuated effusion, repeating this every day or second or third day, applying afterward a compressing dressing. In 6 of the cases several joints were affected, and they were all injected with the antiserum at the same time. This local serotherapy has to be supplemented with intramuscular or intravenous injections of the antiserum for the general effect and to ward off involvement of other joints. This local serotherapy is limited to the larger joints, as it is practically impossible to inject the antiserum into a small articulation. They say they have never seen anything to indicate that there are special strains of gonococci.

Differentiation of Gonococcus Arthritis.—Dufour remarks that when it is difficult to tell gonococcus polyarthritis from acute articular rheumatism, pressure on the intra-articular ends of the bones will decide the question. This causes pain with gonococcus lesions, but not in acute rheumatism. In

three recent cases roentgenograms showed definite changes in the bones, which explained the pain. The multiple arthritis in these cases had developed five and ten days after the first symptoms of gonorrhea or after supposed recovery from gonorrhea. All three recovered completely. The roentgen findings in two cases of acute articular rheumatism failed to reveal any similar changes in the bones.

Journal de Médecine de Bordeaux

Nov. 10, 1919, **90**, No. 21

*Dissociation of Pain. A. Le Dantec.—p. 451.

Dissociation of Pain.—Le Dantec's study of the electric sensibility of the normal skin and of the pain in war wounds has revealed an unsuspected dissociation of sensations. The different forms of the electric current elicit different sensory responses, as he explains in detail. This, he says, gives a basis for treatment of pain. The article is concluded in the following issue.

Paris Médical

Nov. 8, 1919, **9**, No. 45

*Early Reparative Surgery. P. Descomps.—p. 369.
*Diagnosis of Aortitis. A. Mougeot and Pacaud.—p. 374.
*Clinical Signs of Typhus. A. Porot.—p. 380.

Early Reparative Surgery.—Descomps reports 91 per cent. successes in 451 cases of war wounds treated by primary suture, but he explains how impossible this is as a rule in the wounds of peace times. It is rare that surgical intervention is practicable at once. Retarded primary reunion is therefore the practitioner's reliance for early reparative surgery. This is the more necessary as the prudent physician would prefer to wait for the clinical and bacteriologic findings after excision. Two or three days' delay will permit this, so that retarded primary suture is destined to be the method of choice or necessity. It is now a regular classic method, and every one should be familiar with its indications and technic. He warns to be prodigal in cutting out crushed tissues but to be stingy in débridement. After excision, he cleans the focus with ether; whenever the wound allows he gives it a prolonged bath of ether, repeating this several times, allowing the ether to evaporate each time.

Differential Diagnosis of Aortitis.—Mougeot and Pacaud declare that the actual topography of the descending portion of the thoracic aorta differs from the recently published descriptions in several respects. They give some roentgenograms and arguments to correct the discrepancies.

Typhus.—Porot reiterates that of all infections, typhus seems to be the one with the greatest affinity for the nervous system. The clinical picture is that of an eruptive fever with toxi-infection, striking predominantly the nervous system as the cerebrospinal fluid testifies.

Nov. 22, 1919, **9**, No. 47

*Orfila and the Toxicology of Arsenic. Balthazard.—p. 401.
*Postoperative Colic Pains. A. Schwartz.—p. 411.

A Pioneer in Toxicology.—Balthazard gives a historical sketch of the first incumbent of the chair of legal medicine in the Paris medical school, Orfila (of Spanish birth), and a celebrated poisoning case in which he had to invent tests and methods to detect the arsenic in the tissues, and thus laid the foundations for modern toxicology.

Postoperative Colic Pains.—Schwartz has been delighted with his success in warding off and curing postoperative colic pains by applying a bag of ice to the abdomen. He has the ice bag large enough to cover the entire abdomen, and keeps ice in it all the time. The cold seems to prevent the spasms almost inevitable otherwise, while it does not check peristalsis, and the gases escape. He keeps it on generally for about twenty-four hours, applying it first the day after the operation, after the close of the phase of the "absolute silence" of the first few hours.

Presse Médicale, Paris

Nov. 8, 1919, **27**, No. 66

*History of Grafts in Man and Animals. Mauclaire.—p. 661.
*Epilepsy a Coma, not a Convulsion. P. Hartenberg.—p. 664.

Grafts of Tissues.—Mauclaire reviews the history of tissue grafts from the description of rhinoplastics in the Vedas down to Tagliacozzi of Bologna in 1580, who reconstructed the nose from a pedunculated flap from the arm, and others' experiences, bringing his long list down to date. His analysis shows that the question of grafts is still quite complex and is not so simple as it might appear. The surgeon has to be guided by the biologist and not by mere empiricism. Grafts heal in place better when the tissue is taken from consanguineous subjects. Just as in transfusion of blood the blood of donor and recipient should be of the same class, it might be well to select consanguineous homografts. The future of grafting operations opens wonderful vistas, thanks to this symbiosis between the biologist and the surgeon. But, he adds, we must advance only by solidly established facts, and not take our wishes for realities, but wait patiently but hopefully for progress and results.

Epilepsy.—Hartenberg entitles his communication "A New Conception of Epilepsy," as he insists that the main features of the epileptic seizure are not the phenomena of excitation but those resulting from the arrest of the functioning of the brain. This inhibition of the cortical centers dominates the clinical picture, and not the convulsion, as he explains in detail. Experimental research has shown that any sudden inhibition of brain functioning causes unconsciousness first and then muscular movements. All the data exclude spasmophilia as responsible for epilepsy, while they all fit perfectly into the assumption of inhibition of cerebral functioning, with its secondary inevitable muscular play of movements. Sleep arrests the activity of the brain and favors inhibition, and thus explains the frequent predominance of the severer seizures at night. Strychnin tones up the neurons and six epileptics who are taking strychnin have had their seizures remarkably attenuated, some having had no return for one to three months of their weekly seizures. If the seizures were due to primary excitation of the motor centers, as generally assumed, strychnin would increase and aggravate the seizures. But the exact reverse was realized. Unfortunately, he adds, this effect does not last long; the system becomes accustomed to the strychnin and it ceases to influence the seizures. Epilepsy he defines as a paroxysmal abolition of the higher functions of the brain. Not the convulsion but the coma is its essential element.

Nov. 12, 1919, **27**, No. 67

Importance of Concussion in the Prognosis of Traumatism of the Skull. P. Lecène and H. Bouttier.—p. 673.
Iodoform Injections in Treatment of Chancrellous Bubo. Hudelo and Rabut.—p. 676.

Nov. 15, 1919, **27**, No. 68

*Surgery of the Large Intestine. J. Okinczyc.—p. 681.
*Differentiation of Disease in Stomach and Liver. G. Leven.—p. 684.
*Treatment of Blackwater Fever. Houssiau.—p. 685.

Fixation of Cecum and Colon.—Okinczyc's study of cecopexy and colopexy is accompanied by fourteen illustrations of the preferable technics.

Differentiation of Disease in Stomach and Liver.—Leven comments on the intimate connection between the biliary passages and gallbladder and the region of the pylorus and duodenum, and the close reflex connection between the biliary and the gastric regions. Disease in one is liable to hide under the mask of the other, but differentiation is possible by a course of treatment which will soothe the pains, relax the spasms and abolish the reflexes, and thus leave nothing but the organic lesions if there are such, and enable them to be correctly located. He describes this "therapeutic test" in detail. Absolute repose for body and mind is indispensable, bedrest the first week, dieting, and sodium bromid in the middle of two meals for five days, and then supplemented with bismuth every two hours for twenty days. Moist heat should be applied to the abdomen while in bed, and for five or six hours daily after getting up. The whole course is thus the systematic elimination of everything functional and reflex, and in two, three, or four weeks the previously baffling diagnosis is clear.

Blackwater Fever.—Houssiau noted two distinct types of this disease in his twenty cases. In the hemoglobinuria

developing in the course of very severe malaria, treatment must aim to attenuate the malaria, and quinin must be pushed. With this form there are vomiting, chills, high fever, scanty and pink urine, pulse regular but fast, and heart sounds normal. The other type develops in the course of chronic malaria, from some secondary cause. The urine is black and abundant at first, the pulse and heart sounds weak, and treatment must aim to sustain the heart as the main thing. In both forms, death may occur from anuria. Drugs should not be given by the mouth with anuria. Massive injections of camphorated oil, large enemas, and hot packs are useful. The prognosis is grave but not inevitably fatal. Recovery occurred in one of his cases after fifty hours of anuria.

Nov. 19, 1919, **27,** No. 69

*Phenomena of the Type of Anaphylaxis in the Pathogenesis of Epileptic Seizures. P. Pagniez and P. Lieutaud.—p. 693.
*Why Tuberculosis is so Prevalent. F. Mouisset.—p. 694.
*Paradental Cysts. P. Jacques.—p. 696.

Nov. 22, 1919, **27,** No. 70

Opening Lecture of Gynecology Course. J. L. Faure.—p. 701.
Universal Automatic Retractor. E. Juvara.—p. 706.

Anaphylaxis as Factor in Epileptic Seizures.—Pagniez and Lieutaud here announce that they have applied to epilepsy the treatment by antianaphylaxis which has proved effectual in treatment of certain cases of urticaria, circumscribed edema, migraine and other phenomena of anaphylaxis of alimentary origin. In persons subject to these, the anaphylactic phenomena are preceded by changes in the blood, the *crise hémoclasique initiale,* as Widal calls it. This testifies to the anaphylactic nature of the disturbances, and this is confirmed by the warding off of the disturbances when a small amount of the substance responsible for the anaphylaxis is ingested before the regular amount is eaten. (Previous communications on the subject have been summarized in these columns, May 24, 1919, p. 1577, and Aug. 16, 1919, p. 562).

Studying epileptic seizures from this standpoint has shown that if certain epileptics eat a little more than usual of a certain food, the number of leukocytes is liable to drop and there may be an actual hemoclasic crisis, and within a few hours a typical seizure. One case is described in detail. The robust epileptic of 18 with the mentality of an illiterate of 14 was tested with a cup of chocolate, 50 gm. after his usual meal, and a seizure followed. Ten days later the experiment was repeated only that forty-five minutes before the meal he took 50 cg. of pulverized chocolate in a cachet, and there were no seizures for several days. The circumstances otherwise the same, he was given then 60 gm. chocolate after a similar meal. A pronounced hemoclasic crisis followed, the leukocytes dropping from 11,000 to 5,400, while the maximal arterial pressure wavered, and during the night there were three seizures, and a total of eight during the following nine days. Then the experiment was repeated, only with preliminary ingestion of 50 cg. of the chocolate. No hemoclasic crisis followed and no seizures during the ensuing week. Similar experiments on normal subjects showed no change in the blood picture except the physiologic digestion leukocytosis. But whenever the young epileptic took the 50 or 60 gm. of chocolate, either with or without the preliminary dose, the leukocyte count showed pronounced fluctuations, the mononuclears increasing. The meal otherwise consisted of 250 gm. of bread, 200 gm. of meat and vegetables and 250 c.c. of linden flower tea. The effect of the antianaphylaxis measures apparently confirms the correctness of the premises. Similar experiments were repeated on a few other epileptics, with analogous results.

Prophylaxis of Tuberculosis—Mouisset discusses why tuberculosis is more prevalent than any other disease, and reiterates the necessity for and the success in warding it off by keeping the resisting forces up to par. This should be taught from the earliest childhood. He remarks parenthetically that one of the few agreeable surprises of the war was the small proportion with open tuberculosis among the French soldiers returning from imprisonment in Germany. Only 14 per cent. in two groups of 15,000 each, and only 3 or 5 per cent. in an advanced stage. He suggests that the enforced abstention from alcoholic excesses may have had something to do with this.

Paradental Cysts.—Jacques insists that the diagnosis of paradental cyst in the upper jaw is not difficult if the possiblity of such a lesion is borne in mind. It is usually mistaken for sinusitis.

Progrès Médical, Paris

Nov. 15, 1919, **34,** No. 46

*Sarcoma of the Stomach. M. Loeper.—p. 455.
Technical Points in Mycology. A. Sartory.—p. 458.
Trocar for Lumbar Puncture. P. Delmas.—p. 460.

Sarcoma of the Stomach.—Loeper describes a case of gastric sarcoma in an African soldier. The differential diagnosis of these tumors is based on the hour-glass shape of the stomach and the presence in the stomach contents of round cells which are elements of the sarcoma, but are liable to be mistaken for lymphocytes. Fourteen out of 22 operative cases of sarcoma on the outside of the stomach had survivals up to three years. The outlook is much less favorable when the sarcoma develops inside the stomach or works through the wall into and through the mucosa. Only 4 recoveries are known in 19 operative cases of this type. He expatiates on the importance of cytologic examination in all cases of suspected gastric tumors.

Revue Neurologique, Paris

October, 1919, **26,** No. 10

*Progressive Lipodystrophy. L. Boissonnas.—p. 721.
*Genitoglandular Dystrophy. E. Feindel.—p. 752.
*Oneirism: Dream-like Waking Hallucinations. R. Charpentier.—p. 755.

Progressive Lipodystrophy.—Boissonas summarizes twenty cases from the literature and reports two personal cases. He also summarizes a number of cases in which the atrophy of the adipose tissue was restricted to the face. His conclusion from analysis of all the data is that some lesion of the nervous system seems to be the only plausible explanation for the condition.

Genitoglandular Dystrophy.—Feindel discusses de Souza and de Castro's recent publications on this subject.

Waking Hallucinations.—Charpentier discusses the relations between oneirism and mental confusional states.

Annali d'Igiene, Rome

July 31, 1919, **29,** No. 7

Acid-Resisting Bacilli in Animals Succumbing to Inoculation of Tubercle Bacilli. F. Sanfelice.—p. 429.
Glossina Transmitting Trypanosomes to Domestic Animals in Somali District. P. Croveri.—p. 432.

Aug. 31, 1919, **29,** No. 8

*Experimental Mutation of Anthrax Bacilli. A. Zironi.—p. 493.

Mutation of Anthrax Bacilli.—Zironi describes research on rats with anthrax bacilli in which the bacilli showed mutation to a type which he calls *Bacterium anthracis colisimile.*

Policlinico, Rome

Sept. 28, 1919, **26,** No. 39

*Recent Progress in Syphilitic Internal Diseases. T. Pontano.—p. 1129. To be cont'd.
*Reduction of Prolapsed Hemorrhoids. F. Grande.—p. 1141.

Oct. 5, 1919, **26,** No. 40

Congenital Cystic Lymphangioma. J. Aboularage.—p. 1161.

September, 1919, **26,** Medical Section No. 9

Epidemic Influenza. G. Vernoni.—p. 325.
Hypertrophic Cirrhosis of Liver with Extreme Hypertrophy of Spleen. G. Antonelli.—p. 347.

Recent Progress in Knowledge of Internal Syphilitic Disease.—In the course of this long study of recent achievements in this field, Pontano comments on the information sometimes to be derived from the Herxheimer reaction. For example, in one case heart block developed after injection of arsphenamin, revealing an unsuspected localization of the infection. The mitral valves are always spared, but the aortic valves may suffer from the extension of syphilitic aortitis. Romberg says that this latter does not develop until from four to forty-three years after infection. In his

278 cases the average interval was twenty years. Syphilitic aortitis should be suspected, he says, when there are pains and a sensation of oppression back of the sternum, a systolic murmur at the aorta, accentuation of the second aortic sound, and marked relief in the orthodiagram of the left and upper portion of the arch. The pains are of the compression type, and are referred to the upper part of the sternum, radiating to the shoulders and arms, especially to the left, to the neck and the interscapular region. These pains usually are noticed after exercise or copious eating or drinking, but sometimes they come on independently of such factors and even in the night. The modification in the sounds is connected with the changes in the valves and the dilatation of the arch which brings it closer to the wall of the chest. Romberg asserts that accentuation of the systolic murmur may precede the dilatation of the arch as detectable by roentgen examination, and thus may be the first and the only sign of the aortic disease. It should be ausculted, the patient supine, in the first or second intercostal space. The strong second sound differentiates this murmur from that with aortic stenosis in which the second sound is scarcely perceptible. These auscultation findings were manifest in 75 per cent. and the pains in 50 per cent. of his cases. The pains from aortitis may be followed by symptoms of angina pectoris from extension of the process to the mouth of the coronaries. In the early stages of syphilis, Pontano adds, the symptoms from the heart are usually functional and transitory. In 200 soldiers with secondary syphilis, hypoacidity was found in 60 per cent., anacidity in 18 and hyperacidity in 17 per cent. Lesions in the liver from any cause are liable to exaggerate the production of antibodies, so that serologic tests may give a positive response even in the absence of syphilis. He says of tabes and general paralysis that experience is confirming more and more the fact that very mild syphilis is particularly liable to be followed by them as it receives only irregular or irrational or no treatment. He reiterates that there is no morbid condition of the central nervous system or the meninges which may not be simulated by syphilis, but the instability of the symptoms, their brief duration and tendency to recurrence are suggestive of the syphilitic nature.

Treatment of Hemorrhoids.—Grande describes an automatic pumping arrangement which drives the blood out of the turgid veins in the hemorrhoids by the action of compressed air. As the blood is expelled, the hemorrhoids return into the bowel. After defecation the patient sits down on a special metal cup with a valve which compresses the air. It is possible that the veins might recover tone, and the tendency to hemorrhoids be abolished in time by this compressed air massage.

Oct. 12, 1919, **26,** No. 41

Best Incision for Submaxillary Adenophlegmon. A. Poggiolini.—p. 1193.
Recent Progress in Certain Internal Syphilitic Diseases. Tommaso Pontano.—p. 1195. Conc'n. See abstract above.
Local Treatment of Anthrax with Pulverized Mercuric Chlorid. C. M. Pertusio.—p. 1204.

Oct. 19, 1919, **26,** No. 42

*Rat-Bite Disease. G. Bergamini.—p. 1225.

September, 1919, **26,** Surgical Section No. 9

*Purpura Simulating Appendicitis. G. Fantozzi.—p. 281.
Surgical Treatment of Displacement of the Uterus and Genital Prolapse. P. Gilberti.—p. 288.
War Wounds of Bones and Joints. R. Bompani.—p. 297. Cont'n.

Rat-Bite Disease.—Bergamini describes a case of sodoku in a soldier free from inherited or acquired taints and intoxications. The Wassermann reaction was positive, and the young man threw off the disease under arsphenamin after the failure of all other measures.

Purpura Simulating Appendicitis.—This case teaches that purpuric patches or edema at the ankle, knee or elbow should warn not to operate without further consideration when intense abdominal pain and fever suggest appendicitis or perforation of the bowel or intussusception. The fever and the location of the intense pain in the boy of 11 simulated appendicitis, but the purpuric patches were discovered in time. The abdominal pains in these cases of peliosis or purpura rheumatica are evidently from hemorrhagic *poussées* in the viscera. Even without the petechial exanthem, pains in the joints and edema or even simple rheumatic pains should warn of the necessity for caution in operating, and for symptomatic treatment as for hemophilic states in general.

Crónica Médico-Quirúrgica, Havana

August, 1919, **45,** No. 8

*Ocular Complications of Influenza. F. M. Fernández.—p. 232.

September, 1919, **45,** No. 9

*The Victory Meeting of the A. M. A. F. M. Fernández.—p. 251.

Ocular Complications of Influenza.—Fernández states that among his hundreds of influenza cases he encountered only 6 in which there was iritis from toxic action (2), or the optic nerve and papilla (2), or the angle of filtration (1), were suffering from the same toxic action. In the sixth case the corneal ulcer might have been merely a coincidence, but it might have been the direct work of the influenza infection. The patients were all men between 19 and 40, and 4 recovered under the usual local measures. One man was left with incipient atrophy of the optic nerve, and in another case the choked disk accompanying sinusitis only partially retrogressed.

Victory Meeting of the A. M. A.—The editor-in-chief of the *Crónica* (and also of the *Revista cubana de oftalmología*), Dr. F. M. Fernández, was the official delegate from Cuba to the Atlantic City meeting, and he reproduces the program entire with running comment on many of the communications presented in the various sections. He thus comments on practically all in the section on ophthalmology.

Gaceta de los Hospitales, Mexico, D. F.

Aug. 10, 1919, **2,** No. 6

*Surgery of Goiter. Velázquez Uriarte.—p. 59. Conc'n.
Experiences with Pituitary Treatment in Mexico. E. L. Abogado and others.—p. 62.

Surgery of Goiter.—Velázquez reiterates that medical measures seldom have any influence on goiters except on those of the colloid type, and that goiters are like tumors elsewhere in that they are liable to become malignant any day. He gives an illustrated description of some gratifying operative cases. One patient required thyroid treatment afterward for a time. Vision had been blurred for some months before the operation, but soon returned to normal after this.

Juventud Médica, Guatemala

July, 1919, **18,** No. 194

*Yellow Fever in Guatemala. A. Madrid.—p. 94. To be cont'd.
*Lethargic Encephalitis in Guatemala. F. Arana G.—p. 100.
Influenza in Guatemala. M. Y. Arriola.—p. 104.

Yellow Fever in Guatemala.—Madrid relates the particulars of the recent epidemic of yellow fever and the way in which it was stamped out. He emphasizes the absence of prodromes, and the primary vasoconstriction with congestions, followed by the vasodilatation responsible for the hemorrhages.

Lethargic Encephalitis.—The woman of 36 was supposed at first to be drunk when she was brought to the hospital, and she slept continuously for five days, with slight fever but no other symptoms. Under mercurial treatment, facial paralysis and ptosis developed, and the somnolency became more intense, with mild delirium at times. Lumbar puncture showed the tension and albumin content slightly above normal. The fifteenth day hexamethylenamin was given systematically by the mouth, and 1 gm. of peptone was injected by the vein. This was repeated with one day intervals six times. The reaction was severe, with chill and fever, but by the second injection great improvement was manifest. The twenty-sixth day lumbar puncture still showed high tension but the fluid was otherwise normal. By the fifth or sixth week recovery was complete, with no traces of the disease and no memory of any of the weeks of the somnolency. There had been no bulbar paralysis, vertigo or vomiting at any time. Arana ascribes the favorable outcome in large part to the proteosotherapy.

Medicina Ibera, Madrid

Nov. 1, 1919, **9**, No. 104

Cholesterin as Factor in Immunity. T. Morató and G. Villanueva. —p. 77. To be cont'd.
Malignant Pterygium. Jenaro González.—p. 80.
Surgical Tuberculosis. Ricardo Lozano.—p. 82. Begun in No. 103, p. 64.

Observador Médico, Mexico, D. F.

October, 1919, **1**, No. 4

*Syphilis as a Factor in the Eye Complications of Typhus. A. Torres Estrada.—p. 62.

Syphilis as Factor in the Eye Complications of Typhus.—Torres has encountered six cases in which typhus was accompanied by ocular lesions. In all they resembled closely the lesions of syphilis. The optic neuritis progressed to blindness in four of the six cases. One of the others had inherited syphilis, and after having been totally blind for a time after the typhus, under mercury and iodid he regained considerable visual acuity in both eyes. Torres witnessed also a number of similar cases of optic neuritis following influenza, and retrogressing likewise under specific treatment.

Prensa Médica Argentina, Buenos Aires

Sept. 30, 1919, **6**, No. 12

*Pancreatitis and Tardy Inherited Syphilis. C. Bonorino Udaondo and J. E. Carulla.—p. 113.
*Subacute Intestinal Amebiasis. R. F. Vaccarezza and R. Finochietto. —p. 114.
Euphorbia as Diuretic. Manuel Galdós.—p. 117.
*Headache in Children. R. Argañaraz.—p. 118. Conc'd in No. 13. —p. 130.

Chronic Pancreatitis with Tardy Inherited Syphilis.—The case in a young man here reported is the only one of which the writers could find record in which chronic pancreatitis subsided completely and permanently under treatment for tardy inherited syphilis. The clinical picture did not differ in any respect from that of ordinary sclerosis of the pancreas, but the improvement under specific treatment proved the touchstone of its nature. The young man had been married three years and had a healthy child.

Fatal Amebiasis.—A previously supposedly healthy man of 30 suddenly developed symptoms of colorectitis with peritonitis the fifteenth day, and death five days later, from necrosis of the cecum and part of the ileum. The ameba in this case had required only twenty days to induce innumerable ulcerations and perforations, with extensive necrosis not only of the bowel but of adjacent muscle.

Headache in Children.—Argañaraz refers to headache from intermittent loss of balance between the sensory and motor functions of the eyes. The trouble is merely from unbalanced growth, as the eyes do not always develop parallel. The position of the eyes in functional balance differs from the position in anatomic balance, that is, in repose. This position in repose is what is often responsible for the headaches in children between 5 and 12, that persist after defects in refraction and muscular balance have been corrected. He explains how it is possible to detect this anomaly and correct it by the use of weak prisms with the base inward. The headaches subside at once when this is done, as he shows by the details of eight typical cases.

Oct. 10, 191 , **6**, No. 13

*Treatment of Ankylosis of the Knee. A. Ceballos.—p. 121.
Etiology of Influenza. R. Kraus.—p. 126.
*Access to Bones Through the Calf. R. Finochietto.—p. 129.
Dissociation of Bile Pigments. C. P. Waldorp.—p. 131. Begun in No. 11, p. 109.

Ankylosis of the Knee.—Ceballos reviews the ultimate outcome in seven cases of ankylosis of the knee corrected by an operation before 1917. The ultimate outcome has been so satisfactory that he declares operative correction should be undertaken not only for angular but for straight stiff knees. He prefers a pedunculated flap of aponeurosis to interpose, but has used both free and pedunculated flaps, and the results were equally good with both. Gonococcus ankylosis of the hip joint is usually harder to cure than the traumatic, as the margin of the acetabulum is generally damaged, which favors secondary displacement. A year at least must elapse after the infection, as the vitality of the gonococcus is so great. He followed Murphy's technic for the knee, and begins at once to apply extension to both legs. Illustrations are given of the device for passive exercise of the suspended joint by the patient himself.

Access from the Rear to the Bones of the Leg.—Finochietto gives an illustrated description of the large U-shaped flap which he turned back on the calf to the knee for access to a huge osteoma. The flap was readily replaced after the tumor had been removed.

Revista Médica del Rosario

October, 1919, **9**, No. 4

*Teratomas in the Thorax. D. Staffieri.—p. 255.
School Colonies and Vacation Schools. C. Muniagurria.—p. 260.
*The Ideal for the Fight Against Tuberculosis. A. Martelli.—p. 271.

Teratomas in the Chest.—Staffieri adds another to the less than 100 cases of intrathoracic teratomas on record. They have been found at all ages, but they generally make themselves manifest first during the rapid growth at puberty. In only four of the cases on record was the surgeon able to remove the teratoma completely; the others had to be content with evacuating the contents and draining. Most of the patients were left with a fistula. In some of the nonoperative cases the cyst underwent malignant degeneration, and as there is always danger of fatal compression or other injury from the teratoma, it should always be operated on. In the personal case described the woman of 33 had been having pains back of the right breast for seven years, with a recurring cough and blood-stained expectoration. In the last two years she had often found hairs in the sputum but there had never been fever. The operation confirmed the assumption of a teratoma opening into a bronchus, and recovery was soon complete except for a small fistula.

The Ideal Prophylaxis of Tuberculosis.—An important national conference has recently been held at Rosario to discuss the prophylaxis of tuberculosis. The transactions and resolutions adopted are given in this issue of the *Revista*. Martelli urges the general adoption of vaccination against tuberculosis as the ideal method of prophylaxis, citing Maragliano's experiences with it.

Semana Médica, Buenos Aires

Aug. 21, 1919, **26**, No. 34

*Motor Plastic Operations. G. Bosch Arana.—p. 191.
*Voluntary Mutism. F. F. Morixe.—p. 208.
*Syphilitic Hemiplegia. O. E. Adorni.—p. 211.
Fracture of the Elbow. R. A. Rivarola.—p. 216.

Motor Plastic Amputations.—Bosch Arana discusses the general principles and the practical application of means to impart volitional control to artificial limbs by plastic devices. He thinks this vitalization of prostheses has a future beyond anything now anticipated. In this article he does not describe his extensive personal contributions to the subject, reserving this for a later article.

Voluntary Mutism.—The man in question is a docile inmate of the public asylum for the insane. He has persisted for seventeen years in his refusal to speak. This is the first case of prolonged aphrasia published in Argentina.

Syphilitic Hemiplegia.—Adorni's patient developed suddenly flaccid paralysis of the right arm and leg and left facial paralysis. The rapid recovery under mercurial treatment confirmed the suspected syphilitic nature of the paralysis.

Aug. 28, 1919, **26**, No. 35

Subtilis Infection of Eye. E. B. Demaría.—p. 221.
*Reconstruction of Biliary Passages. E. Nicholson.—p. 223.
*Technic for Partial Colectomy. G. Palacios.—p. 229.
*Infanticide. Antonio D'Alessandro.—p. 231.
*Syphilis in Argentina. Manuel Beatti.—p. 235.
*Teaching of Sexual Hygiene for the Young. L. Bard.—p. 237.
*Commercial Aviation. J. A. López.—p. 239.

Reconstruction of Biliary Passages.—Nicholson reviews recent literature on this subject, and describes a personal case of gallstone disease of five years' standing in which several operations were required to correct conditions.

Megacolon.—Palacios describes two cases with successful partial colectomy.

Infanticide.—D'Alessandro makes a plea for arrangements permitting infants to be clandestinely abandoned without immediate injury to the infant. His text for this arraignment of present conditions is a local news item to the effect that four infant cadavers were found in a single day in the same district of the city.

Syphilis in Argentina.—Beatti protests against the assumption of the extreme prevalence of syphilis. He obtained a positive response in only 13 per cent. of 2,400 applications of the Wassermann test to the blood and spinal fluid.

Sexual Hygiene.—Bard refers to the necessity for lectures in the high schools and colleges on the prophylaxis of venereal diseases, as these diseases are so often acquired between 16 and 20. The lectures should be given preferably by the professor of anatomy. The task cannot be left to the parents; for one reason, among the many, because the parents are themselves too ignorant.

Commercial Aviation.—In this eighth instalment of his study of the psychophysiology of the aviator, López discusses the difference between conditions in war and in commercial aviation. He emphasizes the necessity for strict medical tests for commercial aviation or accidents will destroy the public's confidence in it.

Siglo Médico, Madrid

Nov. 1, 1919, **66,** No. 3438

The Medicolegal Conception of Deformity. Jesús Canseco.—p. 929.
*Serodiagnosis of Typhus. J. Blanco and M. Tapia.—p. 931.
*Coagulation Time as Element for the Prognosis. M. Corachán and F. Gallart Mones.—p. 935. Conc'n in No. 3439, p. 960.

Serodiagnosis of Typhus.—Blanco and Tapia obtained pronounced agglutination with the proteus X in thirty-three cases of typhus, in one case at 1:1,000 as early as the third day. In one case the agglutination at 1:1,000 continued up to a month after defervescence.

Coagulation Time and the Prognosis.—Corachán and Gallart comment on the importance of recording the coagulation time of the blood before operating, to be warned of any tendency to hemorrhage or to thrombosis. A family tendency to hemophilia or to thrombosis—a history of phlegmasia alba, of phlebitis, etc., in any member of the family—is also instructive, but the coagulation time of the patient's blood is more certain. They use Bloch's citrated blood-calcium chlorid technic, and in 56 cases thus tested they found that coagulation occurred abnormally fast in 2 and abnormally slow in 18. Ingestion of 3 or 4 gm. of calcium chlorid daily before the operation brought the coagulation time up to normal. When this was not done the operative and postoperative losses of blood confirmed the warning from the coagulation index. They found a normal coagulation index in their cases of venous thrombosis; this suggests that other factors, such as infection, cooperate in thrombosis. In 2 cases of gangrene of the feet, no modification of the abnormally slow coagulation could be realized, even with systematic calcium chlorid and gelatin treatment.

Nov. 8, 1919, **66,** No. 3439

*Intraspinal Treatment of General Paralysis. G. R. Lafora.—p. 953.

Intraspinal Treatment of General Paralysis.—Lafora remarks that Spain is one of the countries where intraspinal treatment of syphilitic disease of the central nervous system has made recently the greatest progress, and vast experience has been acquired during these years of the world war. His latest report on the subject was recently summarized in these columns Dec. 6, 1919, p. 1808.

Hospitalstidende, Copenhagen

Oct. 15, 1919, **62,** No. 42

Influenza in Danish Army. L. Ammentorp.—p. 1161.

Oct. 22, 1919, **62,** No. 43

*Vaccine Treatment of Gonorrhea. H. Boas and O. Thomsen.—p. 1185.
Blood Platelet Extract for Hemorrhage. E. Als.—p. 1190.

Oct. 29, 1919, **62,** No. 44

*Gas Phlegmon in Femur. H. C. Hall and M. Kristensen.—p. 1209.

Vaccine Treatment of Gonorrhea.—Boas and Thomsen tabulate the results of treating recent uncomplicated gonorrhea in men with a vaccine made of twenty-four hours' cultures of several strains of gonococci on ascites-agar plates in 0.9 per cent. saline. In 202 cases not treated with the vaccine, 45 per cent. developed complications, but only 19 per cent. developed complications in 126 treated with the vaccine. The outcome was in reality even more favorable than this, as in 7 of the 23 complication cases a vaccine had been used which proved later to have been defective. The complications in the vaccine cases were very mild; there was prostatitis only in 3, while in the nonvaccine cases prostatitis formed half of the 90 complication cases.

Gas Phlegmon in Femur.—Both the Welch bacillus and *Bacillus phlegmonis emphysematosae* were cultivated from the phlegmon in the femur in the two young men. Infection had presumably occurred from the needle during an injection of caffein.

Hygiea, Stockholm

Oct. 16, 1919, **81,** No. 19

Medical Impressions of the United States. Anderson-Tesch.—p. 785.

Oct. 31, 1919, **81,** No. 20

*Indications for Prostatectomy. Torsten Rietz.—p. 837.
Hypernephroma in Center of Kidney. Nils Stenström.—p. 843.

Indications for Prostatectomy.—Rietz states that the mortality with prostatectomy in Sweden still averages 11 or 12 per cent. even with the best surgeons. In England and America, he adds, the mortality is lower, but in some of the German clinics it is still higher. Analysis of some of the fatal cases showed pathologic conditions in the kidneys in an unexpectedly large proportion, and probably many of the cases recorded as heart disease may have been primarily disease of the kidneys. These facts suggest the importance of ascertaining the functional capacity of the kidneys before attempting any operation on the prostate, and he has been systematically investigating this since the beginning of 1918. He has now a record of 18 cases thus investigated by himself and 9 by Kjellgren—a total of 27 cases, and the outcome has brilliantly confirmed the information thus derived. He selected the water test as the simplest and a very reliable means for functional diagnosis. The patient drinks 1,000 c.c. of water, fasting, at 8 a. m. and the urine is collected at hourly intervals till 12 and then at 3, 6 and 9 p. m. and the night urine till 8 a. m. With this systematic research he found that the patients fell naturally into five groups, as he explains in detail, and the outcome of the cases confirmed the accuracy of the data thus acquired.

Ugeskrift for Læger, Copenhagen

Nov. 13, 1919, **81,** No. 46

*Significance of Bile Pigment in the Serum. E. Meulengracht.—p. 1785.

Clinical Significance of Bile Pigment in the Serum.—Meulengracht reports extensive research and experience in two hospitals with colorimetric estimation of the bilirubin in the blood serum. The bilirubin has to reach a certain level in the serum before it passes into the tissues, and a still higher level before it passes into the urine. There are thus two thresholds for bilirubin. The amount of dilution necessary to bring the blood serum to the same tint as that of a 1:10,000 solution of potassium bichromate or a 1:300 solution of ferric chlorid is the colorimeter gage. He draws 3 c.c. of blood into a Wassermann glass containing a few drops of a 20 per cent. solution of sodium citrate. Only 1 c.c. of the serum is taken for the test. The dilution figure may range from 10 or 20, with slight jaundice, to 200 or 300 in the severer cases. Bilirubin is found in the blood as febrile or toxic bilirubinemia, and as congestion, hemolysis or obstruction bilirubinemia. Examination of the blood for bilirubin is thus an important aid in detecting slight degrees of jaundice and thus sustaining the diagnosis of liver disease in dubious cases, especially with cholelithiasis, hemolytic and pernicious anemia and certain cases of insufficiency of the heart. Examination for urobilinuria supplements but cannot take the place of examination for bilirubinemia. He describes in detail and compares the findings in forty healthy persons, and large numbers of others with various forms of liver and heart disease.